

Typical Cooling Pond Built of Concrete

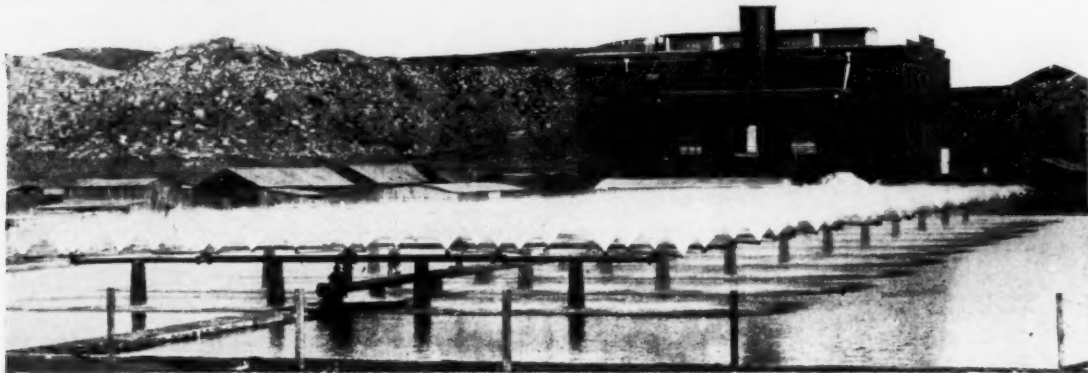


Fig. 92 shows a typical cooling pond equipped with spray nozzles as built by Morley Co. The pond is built with concrete sidewalls and bottom to keep water clean and prevent water soaking into the ground.

Spray Deck Using Roof to Catch Water



In Fig. 93 is shown a spray deck using the roof of a building to catch the water. The louvre walls shown on side, prevent air currents from removing too much of the fine spray.

Operating Principles Of Atmospheric Type Towers

(Continued from Page 27, Column 3)

Efficiency of a spray pond is less than a cooling tower owing to the shorter time the water and air are in contact with each other.

Spray Pond Results

(1) The temperature of the water after spraying is more dependent upon the temperature and humidity of the atmosphere, and upon the fineness of the spray than upon the initial temperature of the water. Therefore it is advisable to spray the water as hot as may be without excessive steaming.

(2) At high humidity, 80 or 90%, the temperature of the water may be lowered to within 12 or 13° F. of the temperature of the air with a total drop in temperature of 35 to 40° F.

(3) At low humidity, 20 to 30%, the temperature of the water after spraying may be as much as 8° F. below the temperature of the air and

the total drop in temperature 40 to 45° F.

(4) The loss of water by evaporation varies from .10 to .15 lbs. per degree lowering of temperature per 100 lbs. of water discharged, or gross loss of about 4 to 6% for 40° F. lowering of temperature.

Cooling Towers

Cooling towers may be subdivided into 3 classes according to method of producing air movement relative to the water flow.

1. *Atmospheric tower* with wind producing the air circulation at right angles to the water flow.
2. *Chimney or natural draft.* Heated air producing the air circulation in a vertical direction.
3. *Forced or mechanical draft.* Forced or induced circulation by fans in vertical direction.

Cooling tower principle. The warm water that comes from any source which is desired to be cooled so that it can be used over again in some condenser is pumped to the top of a tower and distributed over a large surface area in some manner and allowed to fall slowly over baffles or flow over screens or some form of checkerwork.

This checkerwork may be built of wooden joists set on edge and spaced alternating, or of galvanized sheet metal in the form of baffles or screens. The object desired is to have the water spread over a large surface and to flow slowly down so that the air passing horizontally through or vertically through this checkerwork comes into contact with the warm water for a long period of time.

The counterflow principle is generally used, water down and air up. The longer time the water and air are in contact, the greater the evaporation of some part of the water which produces a greater cooling effect in that part of the water left.

The air leaving the top of the vertical flow tower will be 90 to 100% saturated and 5 to 15° lower in temperature than the water entering the tower. The difference depends on the readings of the wet and dry bulb thermometers. The average runs 95% saturated and 10 degrees lower temperature.

Atmospheric Cooling Tower

Atmospheric cooling tower or "wind tower" is composed of a structure of some size usually placed on the roof of a high building where the free passage of the wind currents can take place. The height of the tower varies between 30 and 40 ft. and the base varies with the capacity required.

It may be placed in any open space. If supported on the ground, it is usually raised some height to get better action from the wind currents. This type is sometimes called the "wind tower." The frame work and side walls are open to permit the free passage of air through the tower.

The sides are usually built with louvers or slat fence entirely enclosing the baffles or trays to prevent a high wind from removing too much of the water from the tower in a horizontal direction.

The warm water is pumped to the top of the tower where it is distributed by a spray or any other method over some type of a deck or a system of baffles constructed of wooden beams or galvanized sheet iron that will cause the water to flow down over these surfaces slowly in a thin film or fine streams and permit the air to come into contact with the water. The cooled water is collected at the base of the tower.

In Fig. 94 is shown the general arrangement of an atmospheric type cooling tower designed to provide a finely divided down flow of water produced by each tray, and a horizontal cross current flow of air, produced by the prevailing winds. This tower must be exposed to wind from all directions.

Capacities for good operating conditions: about 1½ gals. of water per minute per square foot of active horizontal area gives best results. If we allow 3 gals. of water circulated per minute to 1 ton of refrigeration, then the active horizontal area required in an atmospheric cooling tower will be 2 square feet per ton of refrigeration. Pressure on the sprinkler head is 2 to 3 lbs. at nozzles.

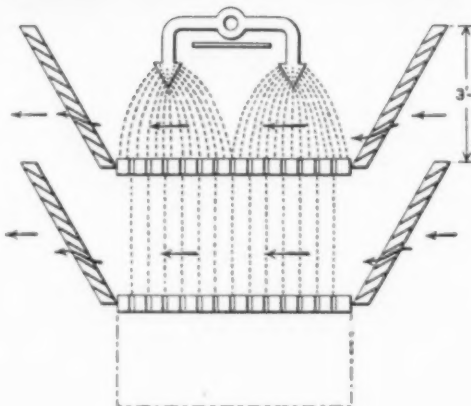
(To Be Continued Next Week)

Atmospheric Type Cooling Towers



Fig. 95 (above)—An atmospheric type cooling tower composed of 12 trays (as shown in Fig. 94) cools 900 g.p.m. of water to within 5° F. of the wet bulb temperature of the air.

Fig. 94 (right)—General arrangement of an atmospheric type cooling tower.



The Buyer's Guide

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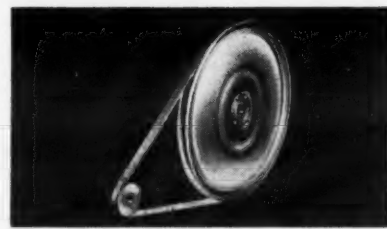
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A nearby distributor carries a complete stock of Dayton V-Belts at all



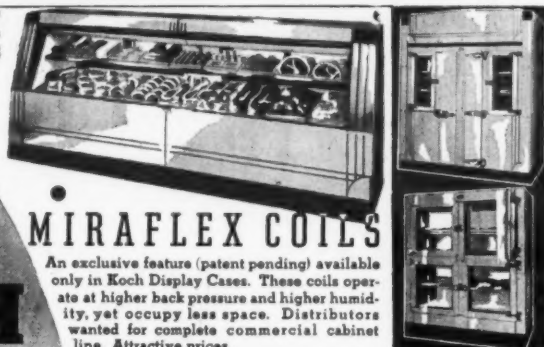
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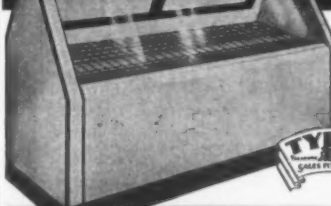
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Refrigerators, Display
Cases, Store Fixtures,
Desirable territory
available. Write for
particulars.



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TYLER'S NEW WELDED STEEL REFRIGERATOR CASES



At least a general purpose case at a sensible price. Offers every advantage of the most costly cases at tremendous savings. Modern in every detail. Comes equipped with coils. Single and double duty models.

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Hundreds in use. Perfect refrigeration for meat, dairy and delicatessen products and all perishables sold in food stores. Write or wire for all the facts.

TYLER Sales-Fixture CO., Dept. E, Niles, Mich.

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A practical all metal Cabinet, white Du-Lux or Porcelain finish; 3" approved insulation; perfectly designed coil and bunker; retinned steel shelves; and bright chromium hardware with locking attachments.

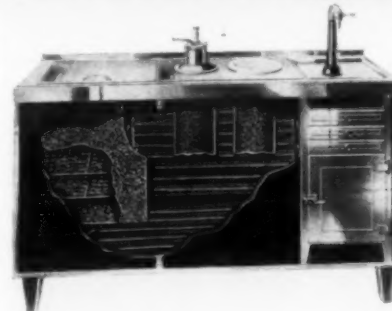
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REFRIGERATION NEWS

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Refrigeration in Prominence at Palestinian Fair

Taubeneck Reports Growth Of Tel Aviv as National Home for Jewish Race

By George F. Taubeneck

TEL AVIV, PALESTINE—Arabs or no Arabs, the Levant Fair has opened and is doing business at the old (annually, since 1923) stand. It is scheduled to run until the end of June.

In a setting reminiscent of Chicago's A Century of Progress Exposition—fully as advanced architecturally and luminously, but smaller, of course—the Levant Fair is by far the biggest thing of its kind in the Near East.

It is much more than just a trade exposition. The Levant Fair is a symbol of probably the most remarkable municipal development which has ever taken place on the face of the globe—the rise of the Tel Aviv, an extremely modernistic city of 100,000 on what had been desert sands, within half a decade.

It is also a show window for the equally remarkable and rapid progress of Palestine, the reborn and reconstructed National Home of the Jews, a former backwater of civilization which is in the process of shedding centuries.

Headed by General Electric (British Thomson-Houston, over here), which has a complete building all of its own, the following makes of refrigerators are being exhibited:

General Electric—The British Thomson-Houston Co., Ltd.

Frigidaire—Engineering Corp. of Palestine.

Kelvinator—Electric Refrigeration & Appliance Co. (Shimmel).

Westinghouse—Levinson Bros.

Crosley—Levinson Bros. and Salkind.

Norge—International Radio Co.

Fairbanks-Morse—Distributor, 92 Allenby Rd., Tel Aviv

Apex—"Hapeles" Glickman & Taiber

Gibson—Zislovitzky Bros.

(Continued on Page 3, Column 1)

Frigidaire to Inaugurate Radio Series June 26

DAYTON—Frigidaire Corp. will go on the air over 59 NBC stations coast to coast, Friday, June 26, with the "Frigidaire Frolic," a half hour program starring Clara, Lu 'n' Em, Ted Fio Rito and his orchestra, and a number of vocal and instrumental soloists.

The program will be broadcast from the Chicago studios of NBC on the following time schedule: 9:30 to 10 p.m., EDT; 8:30 to 9 p.m., EST; 7:30 to 8 p.m., CST; 6:30 to 7 p.m., MST; and 5:30 to 6 p.m., PST.

It will be produced by the radio department of Lord and Thomas, Chicago, and will be built around the gossip conversations of Clara, Lu 'n' Em, who for five years have entertained radio audiences with their homely philosophies and troubles.

Frigidaire is launching this program as an added stimulant to dealer sales. Reaching radio listeners during the hottest season of the year, the program, it is anticipated, will be of extraordinary sales assistance to the dealer and sales organization of more than 20,000 men.

Williams Schedules 12 Regional Meetings

BLOOMINGTON, Ill.—Twelve regional conventions will be sponsored by Williams Oil-O-Matic Heating Corp. and 14 associate manufacturers of boiler and furnace burner units during June, July, and August.

Places and dates for the meetings are: Hotel Kenmore, Boston, June 22-23; Hotel Commodore, New York, June 25-26; Broadwood, Philadelphia, June 29-30; Mayflower Hotel, Washington, July 2-3; Statler, St. Louis, July 9-10; Knickerbocker Hotel, Chicago, July 13-14; Fort Des Moines Hotel, Des Moines, July 16-17; Curtis Hotel, Minneapolis, July 20-21; Olympic Hotel, Seattle, July 30-31; Multnomah Hotel, Portland, Aug. 4-5; Sir Francis Drake Hotel, San Francisco, Aug. 10-11; and Mayfair Hotel, Los Angeles, Aug. 14-15.

Features of This Issue

Refrigeration exhibits at the Levant Fair in Tel Aviv, Palestine, and highlights of the Jewish economic development of that country reported by George F. Taubeneck.

Interviews with refrigeration distributors in Singapore are reported in this week's instalment of the Editor's "Around the World" travelogue.

Interviews with household and commercial refrigeration and air-conditioning dealers in Fort Wayne and Indianapolis, Ind., by P. B. Redeker, T. T. Quinn, and Winifred Hughes, concluded from last week's issue.

Data on 74 air-conditioning installations in the city of Chicago made during the month of May, including name and address of customer, type of establishment, and size of equipment, compiled from records of the Commonwealth Edison Co.

Conclusion of the chapter on Cooling Towers and final instalment of the REFRIGERATION ENGINEER'S MANUAL by S. L. Potts.

Coming—Next Week—July 1

Reports of the annual spring meetings of the American Society of Refrigerating Engineers at Skytop, Pa., and the American Society of Heating & Ventilating Engineers at Buck Hill Falls, Pa., by P. B. Redeker and Eleanor Blum.

Complete specifications for all models of all makes of 1936 household electric refrigerators, reprinted from the April 22 issue, with additions and corrections. Extra copies of this issue will be available for 25¢ each. Please send remittance with order.

10th Anniversary Number—September

Readers of the NEWS are invited to contribute information and pictures recording important events in the historical development of the refrigeration industry for publication in the Tenth Anniversary Number of ELECTRIC REFRIGERATION NEWS to appear in September (exact date of issue to be announced later).

Kelvinator Commercial Unit Shipments Total 15,409 in 8 Months

DETROIT—May shipments of Kelvinator commercial condensing units totaled 3,768, an increase of 70% over shipments for the corresponding month in 1935. Shipments for the eight months' fiscal period ending June 1 were 15,409 units, a 74% increase over the 9,060 shipped during the same period last year, reports J. A. Harlan, commercial sales manager.

Oil burner shipments likewise increased 163% for the eight months' period ending June 1, announces E. V. Walsh, manager of the oil burner division.

Kansas City Dealers Sell 10,000 Units In Five Months

KANSAS CITY—With the 10,000 unit sales total for the first five months of this year in Kansas City 1% behind last year's 10,078 for the same period, members of the Electric and Radio Association expect June sales to bring the total for the first half of this year above the 1935 half-year figure.

May sales helped to bring this year's total up, with 2,699 units topping last year's May sales by 591.

Ten thousand dollars is being spent by the association in a series of institutional newspaper advertisements.

Westinghouse Cuts Size & Weight of Large Models

By Phil B. Redeker

EAST SPRINGFIELD, Mass.—Marked reductions in weight and overall size, a completely sealed unit with compressor and motor forming one integral casting, and the elimination of the shaft seal, distinguish the new line of Westinghouse refrigerating machines, which had their first public showing last Wednesday at the plant here before a group of trade press editors and a few distributors from metropolitan centers.

With the introduction of the line came the announcement that manufacturing operations on air conditioning will be concentrated here, instead of at the East Pittsburgh plant.

How compact the new units are is shown by the following comparative tabulation between a 4-cylinder unit in the new line, and a 6-cylinder unit in the old line, the units being nearly equal in capacity:

	New Design 4 Cylinder Sealless Design	Former 6 Cylinder
No. of cylinders	4	6
Weight	1,600 lbs.	3,400 lbs.
Length	54 in.	76-3/4 in.
Width	26 in.	30-7/8 in.
Height	40 in.	43-1/2 in.
Rpm	1,160	870
Btu/hr. capacity	156,000	165,000
Motor hp.	15	20
Sq. Inches Gasketed Surfaces	50% less	

As outlined by E. R. Wolfert, of the Westinghouse engineering division, (Concluded on Page 2, Column 1)

York Increases Line Of Vertical Coolers

YORK, Pa.—To meet a wider range of air-conditioning requirements, York Ice Machinery Corp. has added several new vertical-type year-round conditioners to its line of standard equipment, according to J. E. Hertzler, manager of the company's air-conditioning division.

The new units are complementary to York's regular line of horizontal air conditioners, being designed primarily for human comfort conditioning applications such as department stores, restaurants, hotels, and various retail specialty shops which have turned to air conditioning as a means of increasing summer trade.

Like the horizontal units, the vertical units are used for conditioning of single rooms, or groups of rooms, from one unit. In the group system, several rooms with similar load characteristics are conditioned by a single unit; in large installations several air (Concluded on Page 7, Column 5)

Hearings July 1 In Coolerator Complaint Case

Federal Trade Commission To Conduct Hearing In Chicago

CHICAGO—Hearing in the Federal Trade Commission's complaint case against Coolerator Co., Duluth manufacturer of ice refrigerators, will open at 9 a.m. July 1, in the offices of the FTC at 433 West Van Buren St. here, it was announced last week by Otis B. Johnson, secretary.

In a complaint against the Coolerator Co., made public April 22, the Federal Trade Commission charged that representations made by the ice refrigerator manufacturer, in disparagement of competitors' products, constituted unfair competition.

The Coolerator Co. was alleged to have made representations tending to make prospective buyers believe that electric refrigerators were undependable, inefficient, and harmful. May 22 was set as the final day on which the company might show cause why a "cease and desist" order should not be issued.

According to the complaint (ELECTRIC REFRIGERATION NEWS, May 6) Coolerator Co. distributed a booklet titled "Why Ice is Best for Refrigeration," in which it was suggested that various gases used in electric refrigerators escape from the coils, permeate the food chamber, and have a harmful effect on food; that foods kept in electric refrigerators dehydrate so much that their nutritive value is impaired; that only with natural or artificial ice it is possible to produce the proper temperature control of foods without disturbing the natural composition of the air or food in the refrigerator; that foods kept in such refrigerators do not dehydrate, and that in such refrigerators any poisonous gases formed from decay of foods are entirely absorbed by the water from the melting ice, and carried away through the drain pipe.

74 Installations of Conditioners Made In Chicago in May

CHICAGO—Seventy-four installations of air-conditioning equipment were made in this city during May, according to figures compiled by the air-conditioning department of Commonwealth Edison Co. The installations total 653 1/2 tons of refrigeration, or a load of 694 1/2 connected hp.

Activity was noted in all business classes during the month, with private offices, restaurants, and general offices leading in the order named. Heralding preparation for the coming of warmer weather, 19 private offices were conditioned during the month, the jobs ranging from 5 tons, in the directors' office of Rotary International, to several installations of 1/2 ton.

Restaurant conditioning was only a step behind, with 18 installations reported during the month. Largest of these was the 100-ton job put into use in the Chez Paree. Other important jobs were the 60-ton installation in the Stevens Building restaurant, a 25-ton installation in Harri- (Concluded on Page 7, Column 1)

R. Cooper Jr. Celebrates Ninth Anniversary

CHICAGO—R. Cooper Jr., Inc. celebrated the ninth anniversary of the incorporation of the firm as distributor for General Electric Co. at a breakfast meeting June 2 in the grand ballroom of Hotel LaSalle. Three hundred members of Cooper's direct selling force and dealers attended the meeting.

Sam Nides, sales promotion manager, was chairman of the affair. Speakers, in addition to President Cooper, included J. S. Duncombe, campaign manager, and Ralph Cameron, manager of General Electric Co.'s department store division.

Nine-year employees were presented with pen-and-pencil sets by Mr. (Concluded on Page 20, Column 1)

Refrigeration Exhibits at Palestine Fair



Pictures of refrigeration exhibits at the Levant Fair. Left: The Frigidaire exhibit, showing models of all sizes, made use of the "Buy on Proof!" material for a background. Center: British-Thomson-Houston appliance display shows refrigerators and ranges. Right: Kelvinator's exhibit shows a large refrigerator and a commercial unit.



While United States has no separate building at the Levant Fair, several American-manufactured electric refrigerators were shown by individual exhibitors. Left to right in this series of pictures are exhibits showing Sparton, Apex, and Leonard refrigerators. The housewife seems interested in the model at the extreme right.

Westinghouse Reduces Size & Weight Of Commercial Condensing Units With New Sealless Design

(Concluded from Page 1, Column 4) some of the objectives attained in the new design, include:

(1) **Completely enclosed unit** eliminating the use of a seal.

(2) **Direct drive**—the motor rotor is mounted directly on the end of crankshaft. The rotor overhangs the main bearing from the short stubby crankshaft so that no outboard bearing is needed, and doing away with the necessity of oiling the motor bearings.

(3) **Cylinders Integrally Cast**—the cylinders are cast integral with the crankcase, reducing gasketed surfaces to a minimum and assuring correct alignment between the cylinder walls, pistons, and crankshaft.

Intake and Exhaust Manifolds

(4) **Intake and Exhaust Manifolds Cast Integral**—intake and exhaust manifolds are cast integral with the cylinder block. No external piping, other than the suction and discharge pipes carrying the refrigerant, is required, reducing to a minimum possibility of leaks due to vibrating pipes.

(5) **Side access plates**—side access plates instead of the usual bottom plates are provided so that the machine can be serviced without disturbing any other parts of the system. Pistons, oil pump, and all bearings are accessible through these side plates. The motor, both rotor and stator, can be reached by simply removing the end bell at the motor end of the compressor.

(6) **Water-cooled motor**—motor, being water-cooled, requires no venti-

lation for cooling. The unit, therefore, can be placed in almost any convenient location, as it is completely enclosed and no cooling air for the motor is needed.

(7) **Forced lubrication**—a gear type oil pump, driven from the crankshaft, forces the lubricating oil to all bearings. The connecting rods are drilled so that the wrist pins are also forced lubricated.

(8) **Light weight**—The direct drive and complete enclosing of the motor makes the use of a bedplate superfluous.

Condenser Arrangement

(9) **Series-parallel condenser manifold**—A novel arrangement is used in conjunction with the shell and coil condenser whereby the condenser is made suitable for use with either city water or for use with a cooling tower. A simple manifold allows the selection of pressure drop through the condenser of eight to one for a given water flow by placing the two sets of coils in either series or parallel. The water tubes leading to these two coils are brought outside the condenser shell and into a manifold. The selection of pressure drop is accomplished by merely rotating the manifold cover ninety degrees and rearranging the gaskets. The series arrangement of the coils gives the higher pressure drop for use with city water, and the parallel arrangement is used to obtain the lower pressure drop so that large quantities of water can be circulated in case a cooling tower is used.

The capacities of the units in the

new line range from 2½ to 25 hp. with 2, 4, and 6-cylinder compressors.

In designing this new compressor, said Mr. Wolfert, the automobile engine was studied. The automobile engine of a few years ago operated at a much lower speed and much shorter life than those now in use. As the industry developed, higher speeds, enclosing all parts, and simplification of details took place until today modern automobile engines operate at speed up to 4,000 rpm. These higher speed engines have longer life than their predecessors.

Speeds used in the Westinghouse new hermetically sealed condensing units are still only a fraction of those used for automotive engines, the maximum speed being used at this time is 1,160 rpm.

Use Proven Parts

It was decided, said Mr. Wolfert, to use as many old parts which had proved satisfactory in service in the past and for which we had tools, as possible. This would place the machine in a class where it was no longer experimental and also keep the factory tooling expense low.

To accomplish the common parts idea, three most popular sizes of machines were selected and compressors designed for 2, 4, and 6 cylinders with a connected motor horsepower respectively of 7½, 15, and 25 hp. The same parts are used for end bearings, pistons, piston rings, connecting rod, wrist pin, center bearings, cylinder heads, side covers, valves, oil pump and various condenser parts.

Only major parts that differ for the three machines are the crankcase, crankshaft, motor and condenser. Even the crankcase and condenser are designed so that the same tools can be used to produce all three sizes.

Oil pump is of greater capacity than before and on the 4-cylinder design has bronze bearings as the pump also carries the harmonic balancer.

Checking Performance of Compressor



Recorded readings insure performance of the new Westinghouse hermetically sealed condensing unit on the test floor.

The oil pump can be readily removed and worked on by simply removing the bolts in the end bearing and rotating so it comes out of the side of the crankcase.

The design uses parallel feed of oil to the bearings rather than series feed. In previous machines the oil had to flow through the crankshaft some distance before it reached the main bearing. In the new design, oil from the pump is piped directly to each main bearing where it is distributed to the nearest connecting rods through the holes in the crankshaft.

Improvements in Valves

Valves, while of the same general design as used in previous machines are improved in several respects. First, the port areas have been increased considerably, allowing the gas easier and less restricted passageways. Method of aligning the plates has been improved.

A small pin is used to align the two halves. A hole is drilled in the cylinder head so that a small projection of the pin fits into the hole. Thus it is impossible to assemble the valves into the compressor head either upside down or wrongside to.

Cylinder design is such that the machine is inherently balanced as far as primary forces are concerned. By primary forces are meant those that tend to vibrate the machine with the same frequency as the speed of rotation. However, there is a secondary force that tends to lift the machine off its base twice for each revolution and to counteract this force, two small rotating weights are placed so that when the force of the machine tends to lift the machine, the two weights combine to hold the machine down, the result being that the machine does not vibrate. These weights rotate in the opposite direction from each other and at twice crankshaft speed.

Condensers this year will be all copper and steel. There will be no brass used which can deteriorate due to certain type of water due to dezincification. Westinghouse later hopes to have a shell and tube type

of condenser available which will be optional at a slight additional cost.

This new design will be equipped with a pilot operated water regulating valve which is said to be more rugged in that the power element consists of a bellows instead of diaphragm.

A visible refrigerant check is provided by means of a combination strainer and sight glass.

An expenditure of approximately half a million dollars for research and experimental laboratories, plant building and equipment, and general rearrangement has been authorized by Westinghouse to modernize plant facilities for its new line of hermetically sealed condensing units at its East Springfield works.

A rearrangement of factory space was necessary to establish air conditioning on a straight line production basis. All manufacturing has been planned to hold air conditioning processes on one floor, with straight line production from casting to final test rooms, paint shop, and shipping platform.

Final assembly is carried on in a completely air-conditioned assembly room, with elaborate precautions being taken to wash and filter all incoming air, to prevent the possibility of damage to finely machined parts by metallic dust and other materials incident to manufacturing operations. Air in this room is kept at constant temperature and humidity best suited to the high quality of production required.

Elaborate arrangements have been made for the final testing of all finished units. New developments by Westinghouse engineers provide for a check on all phases of condensing unit operation, including such prime essentials as capacity, current and electric consumption, and lubrication.

Fedders Baltimore Branch In Charge of Hoover

PHILADELPHIA—Fedders Mfg. Co. has opened a branch office at 2100 Arch St. here, under the direction of Herbert C. Hoover, transferred from the New York City branch.

IT'S READY! YOUR kind of Catalog on YOUR kind of Instruments

• You know the lasting accuracy of Marsh Refrigeration Instruments—but do you know the recent developments in the Marsh line? This new catalog covers the particularly complete line of gauges, dial thermometer, recorders, and other equipment that is setting new standards all its own. Every refrigeration man should have a copy of this book. Use the coupon to request your free copy

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Ice!....

When people buy automatic refrigerators, they expect to be free from all bother with ice. And they have learned from their refrigerator owning friends that the way to be entirely free from trouble in getting ice cubes is to have Flexible Rubber Trays or Grids.

A survey of recent refrigerator purchasers shows 99% expressing a definite preference for this modern ice cube convenience.

Your prospects want this efficient method that pops ice cubes from tray to glass in a split second. They want ice cubes which are full-sized, cold, and dry... at the refrigerator.

Give your salesmen the full sales advantage of this tremendous consumer demand. Insist that the refrigerator you sell comes factory-equipped with a Flexible Rubber Tray or Grid in every ice compartment.

THE INLAND MANUFACTURING COMPANY • DAYTON • OHIO

A TRULY MODERN REFRIGERATOR SHOULD HAVE A
FLEXIBLE RUBBER TRAY OR GRID
IN EVERY ICE COMPARTMENT

19 Countries Have Exhibits at Levant Fair; Great Britain Leads; U. S. Products Shown by Individual Companies

(Continued from Page 1, Column 1)
Leonard — Palestine Radio Co. (R.C.A.)

Servel—Pasternak & Mullens
Sparton—American Near East Corp.
First we want to tell you a little bit about the Fair itself. And then we want you to take a deep breath and listen to the story of what's happened to Palestine in the last few years, since the Jews took it over.

Officials of the Fair are attaching a lot of significance to foreign participation in the Levant Fair. Regarding it as recognition of the advantages of commercial relationships in the Middle East, the active participation of 19 countries in itself marks the biennial event as a success.

National Pavilions

Great Britain naturally leads the group of nations with their own national pavilions, but France, Belgium, Bulgaria, Czechoslovakia, Holland, Norway, Poland, Roumania, Switzerland, Turkey, Austria, Finland, Greece, and Lebanon also are governmentally represented.

The United States, however, is with the group represented only by individual exhibitors, as are Hungary, Yugoslavia, and Lithuania. Three of the countries with national exhibits are newcomers this year: Turkey, Norway, and Holland.

Palestine's own exhibit, designed to spotlight its rapid progress in the last few years, is six times bigger than in 1934, and contains a complete display of the youthful industries of the country.

Agricultural Section Largest

The largest section, of course, is devoted to agriculture, which is still the occupation of the majority of the population. This special agricultural exhibition had the active support of the government department of agriculture, which itself organized an extensive display of agricultural activities, and sponsored the series of competitions which included a cattle and poultry show, fruits and vegetables show, and sheep and goat exhibit.

Palestine's ambition to become the industrial center of the Middle East (which we'll talk more about later) seems near realization when you see the exhibit representing industrial activity at Haifa Bay, a new center of Palestine's rapid development. This exhibit, which represents the heavier industries takes the lead with Tel Aviv's lighter industry display running second. The Palestine Manufacturers' Association used a complete review of industrial progress during the last two years to demonstrate the important role being played by the Haifa Bay area in the economic life of the nation.

Belgian and Turkish Exhibits

But to get back to the "foreigners," two note-worthy sights are the Belgian pavilion under the royal patronage of H. M. King Leopold II, which is called the "Albert 1st" pavilion in memory of the late king's interest in Palestine; and Turkey's booth, hailed as further proof of the growing appreciation on the part of neighboring countries of the value of the fair, which is typical of modern Turkish architecture.

Three features of special interest to us because they seemed so western, were the Levant Fair Aviation Show, The Building Exhibition, and the Middle East Film Contest.

Aviation Show

Aviation companies whose air services cross Palestine were particularly active in the aviation show. The Royal Dutch Line (K.L.M.) even sought to maintain a direct Europe-Palestine service at the exhibition. Imperial Airways, Air France, the Misr Air Works (Egypt), and the new Polish and Roumanian services all participated prominently.

But what at this point seemed to make us right at home was the competition for the best "Ideal Home" plan, which provided for the erection of a full-sized model of the prize winning design.

Palestine is striving to hit her stride in domestic architecture, so the committee opened this contest to plans for one-family residences, two-apartment houses, and for three-story blocks of flats. The latter is the most popular type of domestic architecture in Palestine now.

Building Problems

Fair officials told us that the most acute problems facing the local builder, problems which were expected to be partially solved by the competition, are adequate insulation against heat, damp, and sound. With the rapid growth of cities, the sound problem, they feel, is one that is becoming increasingly acute.

Final choice in the contest was

designed to show the possibilities of a simple worker's house, furnished and equipped with good taste and scientific management. It is a replica of the dwellings being erected in the Shikun Workers Settlement in Dromia, south of Tel Aviv, and consists of three rooms, kitchen, bath, and semi-enclosed terrace. It represents Palestinian-made products from door-step to roof, a feature which is in itself unique in this country.

The film contest mentioned before is, peculiarly enough, considered as a step toward bringing the Middle East abreast of the more advanced countries of the East. The contest had two sections, one for best films already shown in the Middle East, and the second for best films which have not played to Middle East audiences. The cinema, incidentally, is one of the most popular amusements in these parts.

Another interesting feature of the Fair was the biblical pageant presented by the "Habina Theatre" group, a well-known dramatic company, which was enacted as an expression of Palestine's own cultural heritage. Other musical and dramatic events depicted the spiritual and artistic heritage of participating countries.

Background Study Is Clue To Palestine Progress

In a later article we'll discuss the political situation and the rioting (we were there while it was going on). We may even tell you about Haile Selassie, who arrived in Jerusalem a few hours after the writer ran the gauntlet from Tel Aviv to Jerusalem. (With our usual dumb luck, we were also in Delhi when the new Viceroy of India arrived in all his pomp, and in Cairo when the new king Farouk entered town to be acclaimed. But those are all stories that can wait.)

Before you can understand just what is going on in Palestine, however,—and that includes almost unbelievable sales records in electric refrigeration—you need a bit of background. And that's just what we propose to give you.

Here is a country with that currently unfashionable attribute—prosperity. In spite of what Palestinians call "the present slow down" which came about as a result of the war scare, foreign countries are as enthusiastic about its prosperity as ever.

Resistance to Crisis

However, it does annoy the populace a little that many countries have come to regard Palestine as a place of perennial employment, a huge treasury surplus, enormous immigration, and a steady flow of capital.

And the residents will admit that the country has great powers of resistance to crisis. The country had all the things that are such an old story to us—a perilous land boom, land speculation, somewhat over-liberal credit system, and then of course the repercussion of the situation abroad—yet all those things have neither damaged her financial structure or seriously impaired her development.

Now more than ever since British occupation, have European nations and the people of Levant begun to look to Palestine as the center of industry in the Middle East.

Move for Protective Tariffs

As a market for raw materials and as a market for manufactured products the country is no mean customer. The resident, however, dismayed over the fact that the country's imports are still so much greater than her exports, will welcome more legislation similar to the one announced by the government recently putting new duties on such objects as aluminum ware, bolts and nuts, building bricks, primus stoves, welding machines, all kinds of wearing apparel including ladies' dresses, pyjamas, silk stockings etc.—a list which indicates to a small extent the remarkable industrial expansion that is taking place.

Spotted with industries great and small, the very face of Palestine has been changed by this process of industrialization.

Industrial Plants

Industrial plants of various size and equipment abound in and around Jaffa, Tel Aviv, Haifa Bay, and many large towns including Jerusalem. Several of these enterprises by virtue of superior craftsmanship and long experience, have found a lucrative market even in highly industrialized countries like England, Belgium, Holland, and Sweden.

Probably the largest of these is the concession for the exploitation of mineral resources of the Dead Sea where potash, bromine, and magnesium are produced. They tell us that the company has advanced its output

so steadily that it now is between four and five years ahead of schedule.

And here's an interesting fact—so active is the building industry in Palestine today that in spite of a relatively high protective tariff, imports of foreign made cement continue in unprecedented quantity.

An economist has been estimating the amount which the figure of eighteen and one-half million pounds revenue as against twenty-two and a half million pounds expended. The balances are made up by deposits of capital.

He assumes that the citrus industry brings in three millions pounds; industry and trade, seven and one-half millions; dairy, three million; and rent and property, traffic etc., five millions. Excluding the value of its lands, the economist estimates national assets to be worth a hundred and fifteen million pounds.

To a question as to how all this is being done—Palestinians are generally agreed on these factors in its success: Great Britain's peaceful and orderly administration, the increasingly painful need of the oppressed Jews in Eastern and Central Europe for a country where they can live in peace, and the flow into Palestine of capital and people whose enthusiasm for re-settling their ancestral home increases every day.

Jews Responsible for Increase in Revenue

We mentioned before the fact that Palestine during the last few years was not only able to balance her budget, but to accumulate a substantial and evergrowing surplus, while most countries were waging a hopeless war against increasing deficits and national debts, and that this attracted considerable attention all over the world.

Palestinians recognize that to see a

surplus of six and one-half million pounds accumulated in such a small and poor country as Palestine is nothing short of phenomenal.

They also recognize that such "prosperity" has been brought about by Jewish immigration—but here is the astonishing thing, that even in the country which the Jews are making wealthy these persecuted people are not being dealt an honest hand.

Although the bulk of government revenues is derived from Jewish pockets, only little support is given to Jewish educational and health organizations, for which Jewry in and outside Palestine has still to foot the bill. However, even the most niggardly are beginning to realize that it would be a wise policy to "harbour the geese which lay the golden eggs."

Jewish Population Growing At Rate of 12% a Year

And how about the growth of this Jewish population? What has been the population increase and how long will it continue, many are asking.

There are those who regard such matters as the World War, the Mandate, and the Nazi revolution as just ripples on a vast swell. In other words, these people are studying the percent annual increase rather than the absolute numbers of the increase.

With this method, they figure that the natural growth rate of Palestine Jewry is roughly 12% per year. And what does this 12% per annum mean in human terms?

It means, first of all that the Jewish settlement doubles itself approximately every six years and that it has been doing this since 1817 when the first settlers arrived.

It would seem that it takes the average Jew in Palestine, with such external aid as he can get, about six years to become naturalized and to create an economic place for another

Jew, a conclusion which, they say, meets with confirmation in every day observation.

Position of Britain in Growth of Palestine

A little straight geography shows us why Palestine is jumping ahead by leaps and bounds—and probably will continue to jump if the place doesn't become too much of a political "hot spot."

For one thing, Great Britain's foresight after the break-up of the Ottoman Empire with the victory of the Allies in the Great War, is one reason for Palestine's "key" position.

Not that you can change a geographical location—but when Great Britain decided to ensure for herself a continuous corridor of British-protected property stretching from the Mediterranean to India, her Mandate naturally began in Palestine, extended beyond Jordan to cover all Trans-Jordan, which juts out in a narrow corridor connecting with Iraq, also until recently under British protection.

From Basrah, the port of Iraq, the Persian Gulf, which has long been under British influence, leads directly to India. And as directly as that—a new "all red" route to India was created, which is gradually superseding in importance the more devious and dangerous route through the Suez Canal and the Red Sea.

Its advantages are overwhelming. Before, the journey from Port Said to Aden, with its dependence on the Suez Canal, was always a source of uneasiness in times of emergency. The business of guarding the canal and the long time necessarily involved in a sea journey are themselves serious drawbacks. All this is avoided by the land route—and you have something speedier and more expeditious.

And so we have Palestine—in a

(Concluded on Page 4, Column 1)

Delco motors



■ Delco Motors are designed and manufactured with infinite care. Every part of a Delco Motor must meet the high standards of precision and quality which have been set for it; every operation must be performed efficiently and accurately—even down to the last minute detail of assembly. Only by adhering strictly to this policy does Delco merit the continued confidence of the men who make, the men who sell, and the millions of people who use Delco-powered refrigerators, washers, ironers, oil burners and air conditioners.

DELCO PRODUCTS CORPORATION

DAYTON
OHIO

In Canada: McKinnon Industries, Ltd., St. Catharines, Ontario

Growth of Palestine As Home for Jews Is Shown by Statistics

(Concluded from Page 3, Column 5)
superb strategic position, situated at the junction of three continents and next door to the fork of three great air-routes from Europe to Asia and Africa.

And as if her position weren't important enough as the terminus of the new India route, her interest to the world is enhanced by the construction of a pipe-line bringing the rich oils of Mosul in Iraq to the Mediterranean. The pipe line also follows the new route from Iraq, through the Trans-Jordan corridor and across Palestine meeting the sea at Haifa and at Tripoli.

The output of oils via these ports which commenced, incidentally, just two years ago, has increased during that period from 8,000 tons in April, 1934, to 341,000 tons in November, 1935.—the latest figures available. How can Haifa, as the main port for this oil output help partaking of the prosperity and importance accruing to the Iraq oil fields?

Haifa Harbor

A further link to the interior comes via a metalled motor road which is now being built alongside the pipe line. Reminds us of Kelvinator's "Big things are happening."

But to visitors such as ourselves, the clearest outward expression of Palestine's new and significant position is the Haifa Harbor.

Built at a cost of over a million pounds to the government of Palestine, its value, for the pipe-line, the route to India, and as a base in the East Mediterranean, is obvious.

And its importance isn't being overlooked—the growth of Haifa as a trading port has been phenomenal. During the last five years the tonnage of shipping entering there has increased by 257%, leaving it now second in the Near East only to Alexandria, on which it is yearly gaining ground.

Effect of Mandate on Palestinian Exports

But in all this contentment and prosperity there is a "nigger in the woodpile" the writer finds—and that is Palestine's discontent with British action on British citrus imports, and the effect of the "open door" clause on Palestine as a Mandated territory.

The man in the street in England as well as in Palestine wonders why Palestine's oranges and grapefruit, which form the most important items in Palestine's outward trade, have to face such high duties upon entrance to the United Kingdom, the outlet for almost their entire exportable surplus. The root of the trouble, we are told, is that Palestine is not a part of the British Empire—a mandate, yes, but not a colony.

And the famous "Open door" clause comes in Article 18 of the Palestine Mandate which specifically lays down

Modernistic Design Marks Levant Fair Buildings



Left: This large building, with its entrance carrying replicas of the colors of many nations, houses most of the refrigeration exhibits at the Levant Fair in Tel Aviv, Palestine, described by George Taubeneck in this issue. Right: British-Thomson-Houston Co., merchandising G-E refrigerators in Palestine, has a separate building.

that "there shall be no discrimination in Palestine against goods originating in or destined for any of the (League Member) states."

Reciprocal Tariffs Barred

The significance of this is that while any member may grant Palestine goods a tariff preference, Palestine is absolutely prohibited from reciprocating, since her customs duties must apply equally to all imports from member states. This "open door," of course, is designed to prevent any power to whom the mandate is entrusted from using its position to develop the respective countries economically for its own benefit and to the exclusion of the other Powers.

Thus Palestine, so long as she remains a Mandated territory, or the terms of the mandate remain unmodified, can never differentiate between the imports from the different states belonging to the League of Nations. It requires little from the different states belonging to the League of Nations. It requires little imagination to realize what a formidable handicap such an absolute "open door" clause is in a world chaotic with tariff walls, import quotas, exchange control, compensation agreements, and the rest of the paraphernalia of extreme economic nationalism.

70% to United Kingdom

And so, since Palestine must willy nilly treat all imports from the League states alike, she can obtain no preferential treatment from them, except in the unlikely instance of anyone granting a preference and taking nothing in return.

About 70% of Palestine's exports go to the United Kingdom—where they have a good market, for it's a fact that in Great Britain, Palestine is popularly, though erroneously, supposed to be an integral part of the British Empire.

The anomalous fact about the import duties on Palestine citrus fruits is that they serve no manifest Imperial interest.

Palestine's citrus seasons do not conflict with the seasons of any other British interest—British answers to her request for better terms are not satisfactory. Result—Palestine is be-

ginning to wonder—Are we getting a fair deal? Aren't there many countries that would be glad to take over the mandate from the British government?

Farm Marketing Problem

But Palestine has other marketing problems—just as acute but probably more easily solved.

There are first of all the two groups of farmers—the backward with little or no idea of marketing, and the progressive, with a fairly high standard of living, organized through co-operative societies for the purpose of buying and selling.

These two had to be conciliated to meet the growing demands which the Jewish influx made on farm produce.

However, the practical methods of the new settlers are beginning to take effect: areas under cultivation are being increased from year to year and production per acre has likewise increased; dairy and poultry farming have been introduced on most up-to-date lines, and mixed farming is beginning to replace the less remunerative cereals crops in many parts of the country.

Despite all this the country is not yet able to meet the demands of the continuously increasing population as the result of immigration, and still has much headway to make in practically all branches of agriculture to overtake the existing adverse balance of trade in agricultural products.

Problem Resulting from Prices

And then there's the second factor affecting the price levels, and that is Palestine's dependence upon imports of so many foods to meet requirements—thus subjecting the farmer to the vicissitudes of the world market for foodstuffs.

And the third problem arises from the Palestine-Syria Customs Agreement of 1929, under which the special tariffs imposed to protect the local producer are not applicable to Syria. The Syrian produce is thus generally sold in Palestine at prices below those of similar imported foreign products on which the Customs duty is paid, again reducing the price level of the local product.

Standardization of Railway System Being Studied

Palestine, as we have said before, still has many things to do—and one of the things she's trying hard to do something about is her railways.

The three different sections which form the comprehensive "Palestine Railways" all date from different periods—and two of them from the last war period when military reasons rather than economic were most important. At that time too, various stretches of line were constructed in southern Palestine which are either now derelict or else have been completely removed leaving only the ground work on which the inhabitants now grow their cereals.

Then, in addition to the question of route is the question of gauge: two of the systems are standard and one is not. Naturally, the transfer of rolling stock between the two different gauges is impossible.

But for all their difficulties, they have reduced their deficit and carried during the year ending March 1936, 1,200,000 tons of goods traffic and 3,000,000 passengers.

Anyway they're keeping up with the progress of the country as best they can by adding additional goods wagons, and passenger locomotives; new passenger coaches are in order, and loading facilities have been improved.

Statistics Show Growth Of Jewish Industry

Palestine looks ahead. Even with figures showing an increase from 110,000 workers employed in the Jewish industry in 1930 to 350,000 in 1935; in the wage roll from 657,000 pounds to 3,150,000 pounds; in the annual production from 2,500,000 to 8,000,000 pounds, and in total investment from 2,500,000 to 8,750,000 pounds,

Palestine knows that there is still much to be done.

And more figures show that electric power, supplied for industrial purposes by the Palestine Corp., rose from 4,062,000 kwh. in 1931 to 6,575,000 in 1933, and to 22,195,000 in 1935. Imports of industrial machinery in 1931 amounted to 195,000 pounds, in 1933 to 467,000 and in 1935 to 950,000—all of which means that industry is at present the most important single group in the country's economic life.

No Coal or Ore Available

Lack of ores and coal in Palestine prevents the production of machinery for its own requirements from raw materials to the finished products. But it can and does use imported iron, steel, and raw metals, semi-manufactured and half-finished products in developing a certain basis for producing machines and tools.

For this reason Palestinians rejoice over the new electric steel furnace erected by Palestine Foundries and Metal Works Ltd., which they think will mark the beginning of a machine industry in the country for the first time in its history.

In the meantime, Palestine is gradually diversifying its industries, striving to overcome that volume of imports that overshadows home production.

Summary of 1936 Situation

They summarize their industrial situation in 1936 tersely:

"An immigration of a crowd of people with European wants and requirements streams into this country. The standard of industrial production here was yet some three or four years ago a primitive one, therefore making a gap between the country's consumption and production which up to now had to be compensated by import. In spite of the rapid development of our own industrial apparatus during the last years, we have to consider that many articles now produced in this country are still imported on a growing scale. This proves that the consumption of many industrial products exceeds at present the quantity formerly imported plus that which is now produced in this country."

"This proves, furthermore, that on principle, the possibility of erecting new industrial undertakings continues to exist even in such industries which already are represented in our list of home production. It is mainly a question of encouragement by an adequate economic policy, that those possibilities may be used by capital, nowadays plentifully at hand, and by highly skilled labor, placed at the country's disposal by the proceeding industrial education of our workmen and by immigration."

—And there you have the real will-to-do back of the whole movement.

Sources of Capital

When anyone speaks of capital as "nowdays plentifully at hand" we stop to find where it is coming from—and here's the story in Palestine:

From 90,000,000 to 95,000,000 pounds in funds originating outside of Palestine were invested or expended by Jews in Palestine since the Armistice. Some 10,000,000 to 12,000,000 pounds of this, we are told, were used for public purposes by institutions and individuals; and about 80,000,000 to 85,000,000 represent funds brought to the country for private purposes. Included in these private purposes are investments of all kinds in and by private corporations.

Contributions of Immigrants

Actual immigrants, prospective immigrants, and thousands of non-immigrants, representing in all 44 countries, contributed to the vast influx of private funds coming in to Palestine during 1935.

And this money was brought or sent to Palestine in order to establish bases for livelihood for the owners for immediate or future uses or in order to participate actively and practically in the upbuilding of the country.

This "bread upon the waters" varied from a few hundred to tens of thousands of pounds; and the nature of the investment from the purchase of a bit of land or the opening of a small business to the purchase of large areas or the establishment of large enterprises.

Electrification Movement

It is upon such investment that the larger part of the agricultural, commercial, and financial development of recent years has been based.

It is only when you realize that the first large electric power station did not make its appearance in Palestine until 1932, that you can begin to grasp the strange mixture which the country presents today—the comfortable, luxurious life of the Jewish towns merging by imperceptible stages into the primitive life of the Arab fellah.

Overcoming the belief that electrification of Palestine "had no economic basis whatsoever" the few men interested in its progress saw the use of electricity jump from 2,500,000 kw. furnished by the two small stations existent in 1927, to 50,360,000 kw. in 1935.

Now modern industrial and agricultural methods are beginning to lose their novelty, and the Palestine Broadcasting Station, opened March 30, is the latest contribution to Palestine's progress.

PORCELAIN ENAMEL

There are automobile manufacturers who will spend as much as \$1,500.00 to make a car—then put a 6-cent lock on the door!

It is reliably stated that nearly a third of one low-priced car manufacturer's 1934 production was stolen—because the lock was so poor a hair-pin could open it.

Manufacturers of electrical refrigerators—take heed! Don't spend a lot of money in design and improvement, then apply a finish so temporary and soft a hair-pin will scratch it!

PORCELAIN ENAMEL

PORCELAIN ENAMEL INSTITUTE, INC.
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MARINETTE » » » » WISCONSIN

Air Conditioning

Comfort Cooling Sales Are Slow In Ft. Wayne; Commercial Business Improving

By Phil B. Redeker and T. T. Quinn

Barnes Merges Commercial, Air-Conditioning Divisions

E. A. Barnes Co., distributor for General Electric products in Fort Wayne, Ind., has a nicely planned setup on air-conditioning equipment. Activities of the air-conditioning and commercial refrigeration departments are combined under the direction of C. F. Woebeking, but this department is entirely divorced from the activities of the appliance sales division.

Mr. Woebeking's background has been in refrigeration. Starting as a salesman for household refrigerators with the previous Ft. Wayne dealer, he became household sales manager after a short time.

After the dealership changed hands, he became interested in the commercial department, and then became manager of the commercial refrigeration division.

Refrigeration Background Helps

Three salesmen work on commercial refrigeration for Mr. Woebeking, and three others work on nothing but air conditioning (this includes oil furnaces, of course).

A couple of the air-conditioning salesmen were trained in commercial refrigeration work before they began devoting their attention to air conditioning.

Mr. Woebeking thinks that men with a commercial refrigeration background have an advantage in conditioner sales work. He points out that they know how to sell 'performance,' how to talk to owners of commercial establishments, how to educate themselves so that they can learn the fundamentals of estimating jobs.

Must Study to Succeed

"Air-conditioning salesmen must learn to apply themselves, to study," says Mr. Woebeking. "And that's something every successful commercial refrigeration salesman has to do."

After the air-conditioning salesmen uncover what seems to be a live prospect, and get him to the point of asking for a complete estimate, Mr. Woebeking sends out his especially trained sales engineer to work on the job.

Representatives of the factory provided much valuable service and advice in organizing and setting up the department, it was pointed out by officials of the dealership.

"Sales of comfort cooling equipment have been slow in Ft. Wayne this year," says Mr. Woebeking. "Cold weather this Spring has kept good prospects from buying."

"We need a 'leader' to break into the private office and small shop field. If we could just get a couple of good installations in these types of markets, I think good progress could be made."

Outstanding among jobs which the Barnes Co. has installed recently are two funeral parlor installations. One has five floor-type room coolers operating from one compressor, and the other utilizes three floor-type room coolers.

Other jobs of which Mr. Woebeking is particularly proud is a year-round installation in the Keenan hotel cocktail lounge. Summer phase of this installation has 5-tons cooling capacity. In the Anthony Hotel grille room and coffee shop is a 15-ton comfort cooling installation.

Frigidaire Claims First Installation in City

L. E. Paul of the Refrigeration Equipment Co., Frigidaire distributor, claims to have made the first comfort cooling installation in Ft. Wayne—door-type conditioners in the Keenan hotel coffee shop—when he was with the former Frigidaire distributor in Ft. Wayne.

He's been hammering away at air conditioning every since, and modestly admits having installed a few good jobs, although declaring that "sales are nothing like they should be."

Like his competitor Mr. Woebeking of the G-E dealership, Mr. Paul believes that once the leaders in certain classes of the market are sold, the selling job will be a lot easier. Cool weather right through into June has been deterrent to sales this year, says Mr. Paul, although he has compiled figures on average temperatures in Ft.

Wayne that shows there is plenty of need for summer cooling.

ally allows it to make better prices than most of its competitors and gives it a big lead in the field. Credit in this field has been improving, too. Dairy installations have been on the upgrade, and Mr. Fredrickson looks to this field to show marked improvement as general business conditions get better. Credit conditions here have always been good, he says—the only thing was that the business was lacking. When operators of this sort can't afford equipment, they just don't buy it, he has found. When they do, they pay for it.

Competition No Problem

Commercial business, generally, is pretty highly competitive—so we asked Mr. Fredrickson about his experience in this respect. His reply was unusual, to say the least.

"I can honestly say," he answered, "that competitive conditions don't bother us in the least. We're simply too far ahead of our competitors to have this problem. Our business has always been good, and we usually have our installations figured so that they're right around the lowest on the jobs we bid."

"No sir, competition hasn't worried us a bit. We just go our way, making the best prices we can on all the jobs we do, and letting our competitors do the same. As a result, we're always plenty busy, and we don't have time to worry much about what the others do."

'Not Under Way Yet,' Says Air-O-Matic Man

General Equipment Co. handles Air-O-Matic air-conditioning equipment in Ft. Wayne and the surrounding territory, but Manager R. L. Romy says that this end of his business hasn't even gotten under way as yet.

"We've sold several Timken oil burner furnaces for winter air condi-

tioning," he said, "but equipment for summer cooling purposes hasn't been doing much at all."

Mr. Romy finds a general state of apathy toward air conditioning in most of the prospects he and his four salesmen have seen this year. Reason for this, he thinks, may be that Ft. Wayne seldom gets awfully hot in the summer—and that consequently homeowners haven't felt any great need of making their conditions more comfortable.

After Furnace Buyers

The company does, however, expect to sell Air-O-Matic equipment to several of the prospects who bought oil furnaces last year. Salesmen talked year-round conditioning to them in making the sale, but summer equipment was not needed then and so the customers decided to wait.

Several of them were undecided, but still rank as good prospect material. Mr. Romy made sure, in all such installations, that the furnace was installed far enough away from the wall to get a compressor in later, if and when the owner decides to make his system year 'round.

Handling Ice-O-Matic commercial machines, the company finds, as in household, that business conditions are much better in the outlying towns than in Ft. Wayne itself.

Credit First Sales Worry

"First worry when you're selling commercial refrigeration in Ft. Wayne," Mr. Romy said, "is credit. This applies to both of the sides that we handle—straight commercial and beer cooling."

"Some people can't seem to keep from getting in above their heads, when it comes to buying this equipment. You ought to see the number of display cases and equipment, for example, in empty stores in this town. The same thing is true of beer cooling

—people get in on a shoestring, and are forced to drop out the first bad month or so they have."

In the sections of his territory outside Ft. Wayne, however, Mr. Romy finds financial conditions better. Price, another plague in Ft. Wayne's commercial picture as far as the company is concerned, is missing out there, too.

"The people in the smaller towns want to know about service," Mr. Romy said. "When we go to sell them a job, the first question they ask is: 'What kind of service can I get on this outfit?'"

"If you can take them around and show them a few installations, and let the owners of the jobs tell about the service they've received, your selling work is practically over. Service is what they're after, and when they get it they sign the order."

"And the great majority of this business is for cash, too."

Kelvinator Dealer Just Starting in Commercial

Stucky Bros., Kelvinator dealer in Ft. Wayne, had just obtained the franchise for commercial refrigeration and air conditioning. It had no such equipment on display when we called—and Joseph Stucky, manager, didn't expect that a lot of air-conditioning business would be done by the firm this year.

Price is still the biggest factor against sales of conditioning equipment in the city, Mr. Stucky believes—although he added that he hasn't been in the field long enough to speak as an authority on the subject.

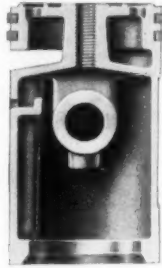
Another barrier to Ft. Wayne air-conditioning sales, in Mr. Stucky's opinion, is the lack of knowledge about it. "Nobody seems to know what air conditioning is," he said.

Beverage and water cooling accounts for most of the firm's commercial business.

(Concluded on Page 6, Column 1)

20 QUALITY FEATURES

(No. 13)



Servel's Self-Lubricating Pistons Prevent Cylinder Scoring by Feeding Oil Uniformly at the Vital Mid-Section.

COMPRESSOR OR MACHINE?

The refrigeration and air conditioning dealer must have a good compressor, but to insure lasting success he must be sure of something more. Servel machine units offer not only a fine compressor, but a completely balanced assembly of condenser, motor, control, and drive to adequately match the compressor and insure maximum overall efficiency and dependability. There may be an opening for a profitable Servel dealership in your territory; a letter or a telegram will bring complete information.

SERVEL

COMMERCIAL REFRIGERATION

SERVEL, INC. Commercial Refrigeration Division EVANSVILLE, IND.

This modern 35-acre plant is the home of Servel Commercial Refrigeration and the world-famous Electrolux, the Servel Gas Refrigerator



There is no Substitute for Experience

Bottlers No Help In Retailing Beverage Coolers, Dealer Says

(Concluded from Page 5, Column 5)

cial business at present, he added. Most of this business, too, is of the piece-by-piece variety. Few sales are made in quantities to any one concern. While he thinks that Kelvinator's bottled beverage cooler sales plan is fine, Mr. Stucky says local bottlers haven't been enthusiastic about promoting it, either direct or through their drivers.

"Bottlers just aren't interested in selling bottle coolers with a cost as high as ours," he said. "They'd rather sell something cheaper—something which they think sells more easily to their customers."

"They're not interested, either, in having their salesmen-drivers sell the units, working on a bonus plan through us. They want their drivers to stick to their main job—selling beverages to dealers—and they sort of let the other angles of the work take care of themselves."

May Have Separate Staffs

The firm's three salesmen (Mr. Stucky is looking for three more good ones) sell commercial and air conditioning, as well as household.

After the company gets into commercial in a big way, however, Mr. Stucky thinks it likely that he will want to separate his household and commercial-air conditioning activities into two separate departments.

With the firm handling only the package type of commercial equipment up to the present, however, such a change hasn't been found necessary.

Westinghouse Dealer Selling Water Coolers

Westinghouse's commercial refrigeration business in Ft. Wayne is handled by Ed Lehman, 1225 South Calhoun.

All angles of the commercial field have been rather active this year, but most active of all has been the water

cooler business, we were told by Charles Watterson, manager of National Mill Supply Co.'s refrigeration department. The company is Westinghouse distributor in the territory.

Volume water cooler business has featured Mr. Lehman's business this spring. In the International Harvester plant, for example, the firm recently installed 17 Westinghouse water coolers. Several more went into one of the large hosiery mills in the city.

These larger orders overshadow individual water cooler sales, of which there have been more than the usual number this year, it was reported.

Gardner Handles Service Through Independents

Reliable independent service men in Indiana cities outside Indianapolis might do well to get acquainted with F. D. Gardner, who handles Carbon-dale and Howe compressors, and Hussman-Ligonier cases and compressors in most of the state with the exception of Fort Wayne and Muncie.

Mr. Gardner handles all of his service work in that way in the outlying territory. In addition to proving economical to him, it has proved efficient and customer-satisfying too, he says.

Does Own Work in City

"Of course, we do all our own installation and service work in and around Indianapolis," Mr. Gardner said, "but where the job is a good distance off we've found success and satisfaction in working through independent service men and companies."

"Our standard terms call for one year's free service on all equipment we sell. This covers both parts and workmanship."

"I've been in business here for a good many years, and one of the things our reputation has been built on is giving good service, and plenty of it. So it's easy to see that we have to split up our service work throughout the state, so that we can handle jobs quickly and well."

"Here's the way we've been handling it: we have independent service men and companies spotted throughout our territory, not too far apart but that they can get to any job in

Westinghouse Officials Study a New Product



Shel H. Myers, air-conditioning sales manager of Westinghouse Electric & Mfg. Co., points out features of the company's new hermetically sealed condensing unit to Westinghouse Vice Presidents Kelly (left) and Kintner.

that vicinity in short order. When we put in another job in that territory, we call the independent service man right in on the installation.

"He helps our home office men with it, and in that way becomes familiar with the way it's constructed and what it's supposed to do. When he's called in on the job later, he's no stranger to it, and he doesn't have to waste a lot of time finding out what it's all about."

"Our service calls are made regularly during the year of free service, no matter where the job is located. We try to get around to the jobs and look them over before anything goes wrong—not afterward. If we can keep a job in good working order by that means, it's worth the extra little bit it costs, and it makes our selling job a lot easier when new business crops up in the neighborhood."

Service Men on Flat Rate

"News about an installation that's working well—or that isn't—has a queer habit of getting around in a hurry. We want the news about our jobs to be good news."

"Well, after the job's installed, we give the service man in that territory a flat rate—according to the size of the installation and other things—to look after it for a year. He makes periodic service calls, checks the installation, and sees that everything is going along all right."

"Just to be sure he does make the calls according to contract, he is required to make quarterly reports to us on all the jobs installed in his territory. He has a blank to fill out, listing the service operations, and he checks off these as he does them. Special calls are reported, too, so we have a pretty complete record of each installation during the period covered by our warranty."

Credit Is Improving

"What happens to it after that is his own business. He may get a lot of revenue from it—he may not get any. But we're sure that it is being looked after properly during the service period."

General commercial business is good—better than it has been for some time, Mr. Gardner said. Especially is this true regarding commercial cases, for meat markets, and dairy installations.

One encouraging thing about business in recent months, he says, is the improvement in credits. This is particularly true in the meat market field. Dairy business, says Mr. Gardner, has always been good pay.

"The dairy companies getting equipment are always big enough to pay cash," he added, "and that's the way most of that business is."

Majority of the firm's installations have been in the larger dairy plants, with not so many in the smaller ones throughout the state, and on dairy farms. Average sizes of the jobs, Mr. Gardner said, run between 2 and 6 hp.

Only One Repossession

Mr. Gardner is proud of his firm's record in granting credit, even in the toughest times. "I've been in business around here for years," he answered, when asked how he regulated this end of the business, "and I can tell you pretty well just who can and who can't afford new equipment."

"If there's any doubt of their being able to meet payments, our men have instructions to turn down the business." This policy has worked well

for Mr. Gardner—so well, in fact, that he only had to repossess one job last year.

Mr. Gardner has five salesmen working in his territory. All of them have been with him for some years, and understand his policies as well as the credit ranking of the companies in their sections.

Terms are strict and unvarying—at least 20% down, with not more than two years to pay. "We try to get all we can to pay within 18 months," Mr. Gardner said.

Trade-Ins a Problem

He feels that larger down payments, and short terms, are more of benefit than hindrance to sales. "If the customer gets an equity in a case or a piece of equipment, he's not so apt to let it go back when it's a little hard to meet the payments. Most of the commercial sales that bounce back are the ones sold on loose terms."

"Trade-ins" have been a problem with Mr. Gardner for some time, and

he has all sorts of used equipment in a room off his main showroom. It used to bother him a lot, but lately he's figured out a way that he thinks will meet that successfully, too.

"Most of the equipment you get in on a trade isn't good for much besides the parts," he said. "It's been pretty well used up—and the man who gives it up usually has a reason for doing so. It's the same as with used cars, I figure—as long as your car is running all right, you don't give it up."

"A lot of the stuff we get in here we tear down for the parts, and junk the rest. There's not much of a market—at a profit—in selling used equipment. If we did sell it, we'd want to be sure it was in good working order, and the labor costs in repairing jobs like that shoot prices up beyond what you can sell the stuff for."

"About the only way we sell it is to people who want to tinker around with it themselves. We tell them what's wrong with it, and if they want it at our price, all right."

AUDITORIUM PATENTS

COVERING CONTRIBUTIONS TO THE AIR CONDITIONING ART WILL BE ENFORCED

There need be no misunderstanding of the effect of the recent decision of the Second Circuit Court of Appeals holding invalid certain claims of the Lewis Reissue Patent No. 16,611 and of the Fleisher Patent No. 1,670,656.

The judgment in that suit is personal to the defendants there involved;

it does not invalidate the remaining claims of those patents, two of which have been held valid and infringing in other litigation.

It does not involve or invalidate the

TWENTY-FIVE ADDITIONAL PATENTS

and numerous applications owned or controlled by Auditorium covering other important improvements and economies in the field of air conditioning.

Auditorium has already brought suit against another infringer and expects to enforce its rights wherever evidence of unlicensed use of its inventions is obtained.

Permission to operate under Auditorium's patents may be secured from any of the following Licensees, all of whom have acknowledged the validity of the Auditorium patents and agreed to pay the royalties thereunder.

AMERICAN BLOWER CORPORATION
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GENERAL ELECTRIC COMPANY
Schenectady, New York

ROSS INDUSTRIES CORPORATION
New Brunswick, N. J.
THE COOLING & AIR CONDITIONING CORP.
Hyde Park, Boston, Mass.
YORK ICE MACHINERY CORPORATION
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AUDITORIUM CONDITIONING CORPORATION
New York Office—17 EAST 42nd STREET

Patents No.
2,025,973
1,850,049

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Copper-to-copper connections for refrigeration

1. LEAKPROOF...wrought copper is non-porous.
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3. VIBRATION PROOF...sealed connections cannot leak refrigeration gas.

THE qualities of Arco copper seem made to order for modern refrigeration requirements. Check them off: non-porous, corrosion resisting, smooth full flow inner walls, with no place for sediment to gather at joints, easily handled, self insulating, safe with any refrigerant. These qualities run through the complete installation.

The Arco pure wrought copper-to-copper connection is proof against leakage, vibration, strain and pressure.

The line is complete from 1/4" to 4". First cost is moderate, and greater serviceable life of Arco Copper makes it still cheaper. Many plants and manufacturers have adopted Arco Copper as standard for original and replacement equipment and installations. You will, too, when you learn the facts. Write today.

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ARCO

Full Flow

WROUGHT COPPER FITTINGS & PIPE

COPPER TO COPPER MAKES THE FOOLPROOF JOINT

The new 1-piece wrought tee with reduction on the run and on the branch.

Ten Chicago Homes Are Conditioned During May

(Concluded from Page 1, Column 5)

son's restaurant, another, for 30 tons, in Harding's restaurant, and two more, of 20 tons each, in the Beacon and Gee Tee restaurants.

General offices conditioned during the month totaled seven, ranging from 3 to 10 tons, and including two applications made in the headquarters of Refrigeration & Air Conditioning Institute, the first for 2 tons, the second for 7½.

Residential conditioning showed a nice figure for the month, the 10 installations in this field putting it next, numerically, to restaurants and private offices in ranking for the period. The 10 reported jobs included four bedroom installations, and ranged in size from ½ to 1½ tons capacity.

Nine air-conditioning systems were installed in stores during the month. Of this total, two were candy stores, six more were clothing and shoe stores, and the remaining one a fur store.

In the professional field, seven installations were reported for the month. These included a beauty shop, two doctors' offices, two dentists' offices, a drug store, and an optometrist. The beauty shop installation was in Estelle Beauty Parlor, and totaled 20 tons, while the drug store job, in Von Hermann Drug Co., totaled 15 tons.

Dealer Conditions Store

NEWARK, N. J. — Davega-City Radio Shop, dealer in sports goods, radio, and refrigeration, is installing a \$15,000 air-conditioning system in its store at 60 Park Place, making the fifth store in the retail chain to be conditioned, reports A. Davega, one of the firm's executives.

Trane Describes Line of Conditioners in Book

LA CROSSE, Wis.—The Trane Co. recently has issued a 16-page booklet describing all of its residential heating and air-conditioning systems in non-technical style for consumer reading.

Lithographic reproductions show the various units and homes in which installations have been made.

To clarify the subject of air conditioning the home, the bulletin gives definitions of air-conditioning terms as given by the American Society of Refrigerating Engineers and the American Society of Heating and Ventilating Engineers, and distinguishes between winter and summer conditioning.

The Trane "Climate Changer," the first unit described, "is a complete air-conditioning installation of the central system type, ideal for home installation because all working parts are in one package, located in the basement." It provides cleansing, cooling, and dehumidifying in the summer; and cleansing, heating, and humidifying in the winter.

A self-contained unit, the "Airite System," the booklet says, "offers the same basic advantages as the 'Climate Changer' with a few minor exceptions." It has been designed for those who wish to have a self-contained oil-burning unit.

To condition favorite rooms or portions of the home, the booklet suggests the "Dual System," or split system type installation. A "Climate Changer," it explains, working in conjunction with the boiler will completely air condition any portion of the home.

Gunts Directs May Sales

BALTIMORE—E. Lyell Gunts, formerly publicity and advertising director of May Oil Burner Corp., manufacturer of air-conditioning equipment and oil burners, was recently named director of sales for the company.

Railroads to Study Cost and Efficiency Of Air Conditioning

NEW YORK CITY—An intensive study of the cost and efficiency of the air-conditioning systems now in use in passenger cars will be undertaken by the Association of American Railroads during the next three months, J. J. Pelley, president of the association recently announced.

Although the division of research has been working on the problem for some time, 30 railroads each have been asked to assign engineers to the study, which will be conducted under the supervision of L. W. Wallace, director of the equipment research division of the association.

Systems now in use will be observed to determine how far they can be standardized to reduce costs of installation and maintenance, what their relative efficiency is, and whether passenger comfort is insured under the present conditions.

Beginning July 6, the engineers appointed will begin a special course of instruction in air conditioning at Ohio State University under the direction of Prof. A. L. Brown, who is serving the research division as consultant on air conditioning. He will be assisted by other members of the university staff as well as by Mr. Wallace.

Laboratory work being done at the Mt. Clare shops of the Baltimore and Ohio railroad, at the university, and at the Pullman Standard Car Mfg. Co. plant in Chicago will be explained and exhibited to the engineers.

After the course, this committee will be assigned to the various railroads to make tests of the systems under varying conditions.

Seven thousand air-conditioned passenger cars are now in operation on the railroads of the United States, a

recent association survey shows. Of this number, the railroads own 2,731, including 1,414 coaches, 744 dining cars, and 573 other types of passenger cars.

The Pullman Co. owns 4,005 air-conditioned passenger cars, including 3,335 standard types of sleeping cars, 205 tourist sleepers, and 376 parlor cars. The remaining 89 cars represent other types of passenger equipment owned and operated by the Pullman Co.

Armstrong to Sell Corning Glass Fibre

LANCASTER, Pa.—Armstrong Cork Products Co. will market Corning Glass Works' new glass-fibre wool insulation under the trade name of "Armstrong's Wool Insulation" according to a sales agreement recently consummated between the two companies, reports L. E. Cover, manager of Armstrong's equipment insulation department.

The new product will be furnished in the form of sealed packages, blankets, fold-bats, and bulk or loose form for use as a fill insulation.

Armstrong will serve manufacturers of refrigerators and refrigerated equipment, refrigerator and passenger railway cars, refrigerated truck bodies and passenger automobiles, stoves, and equipment for the oil, steel, and other industries, Mr. Cover says. The company will also sell the material for industrial duct insulation and other industrial equipment.

Research departments of the two companies have been working together to develop fabricated forms of this wool.

Low thermal conductivity, ranging in the commercial densities from 0.23 B.t.u. to 0.26 B.t.u. hr.° F. at 90° F. mean temperature is claimed for the Corning insulation.

York Adds Vertical Models to Line of Air Conditioners

(Concluded from Page 1, Column 4)

conditioners may be operated in multiple from a central refrigerating machine. Smallest of the new units is the model FC-308, which can be mounted in either a horizontal or a vertical position. This unit is provided with its own plenum chamber, lined with an acoustical material for quiet operation, and is designed for installation right in the conditioned space. This model has about 3 tons of refrigerating capacity.

Larger units are the new 600 series (models F-608 and F-612) with approximately 6 tons of cooling capacity; the 1500 series (F-1508 and F-1512) with about 15 tons of cooling capacity; and the 3000 series (F-3008, F-3012, and F-3016) which handle about 30 tons of refrigerating effect per day, depending on operating conditions and the model selected.

These consist of a casing, drip pan, fan assembly and motor, heating and cooling coils, thermostatic expansion valve, liquid distributing header, humidifier, and air filter of the sectional type, all mounted in a casing of brown baked enamel.

Fans are of ample size to secure quiet, efficient operation, and a range of fan capacities for each unit makes it adaptable to varying requirements in the field. A new feature is the use of variable pitch driving pulleys, which permit close adjustment of fan speeds after a unit has been installed.

Cooling coils are of the York corrugated fin type, for direct expansion refrigerant, cold water, or brine as the cooling medium. Heating surface is of the same type, and accommodates either steam or hot water.

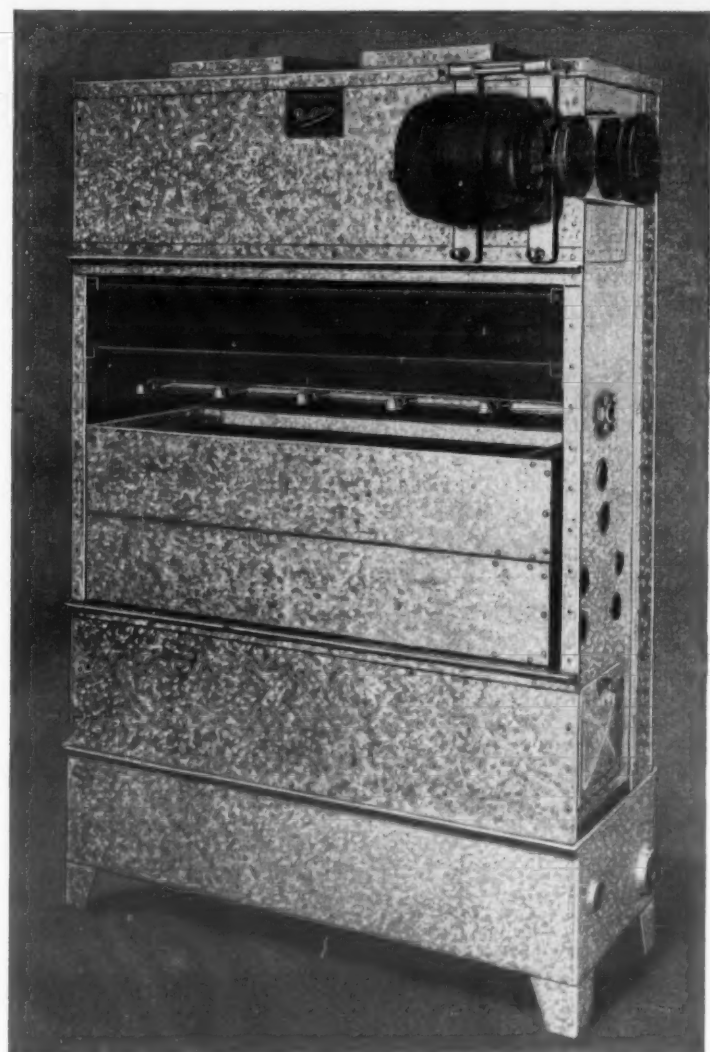
Where 74 Air-Conditioning Systems Were Installed in Chicago in May

Name and Address	Class of Business	Tons	Hp.
Estelle Beauty Parlor, 1505 N. Pulaski Rd.	Beauty Shop	20	25
Creviston, Dr. Ralph, 2001 W. 51st St.	Dentist	½	½
Lawless, Dr. Theodore, 4201 S. Parkway	Doctor	1	1
Nortell, Dr. J. L., 805 N. LeClaire	Doctor	1	1
Rooks, Dr. Wm., 55 E. Washington	Dentist	½	½
Silge, Dr. Walter H., 4001 Lincoln Ave.	Optometrist	1	1
Von Hermann Drug, Conway Bldg.	Drug Store	15	17
Bauer & Black, 45 W. 25th St.	Industrial	30	35½
Wilson & Co. (Dog Sign), 901 N. Michigan	Industrial-Advertising	5	5½
Refrigeration & Air Conditioning Institute, 2150 W. Lawrence Ave.	General Office-School	2	2
Refrigeration & Air Conditioning Institute, 2150 W. Lawrence Ave.	General Office-School	7½	9
Dearborn Chemical Co., 1029 W. 35th St.	General Office	3	3½
International Register, 15 S. Throop St.	General Office	7½	8½
McKesson-Fuller-Morrison, 540 W. Randolph	General Office	3	3
Underwriters' Laboratory, 207 E. Ohio St.	General Office	5	5½
White Cap Co., 1806 N. Central Ave.	General Office	10	12
Armour, P. D., 135 S. La Salle St.	Private Office	¼	¼
Aire Rite Corp., 332 S. Michigan Ave.	Private Office	¼	¼
Mr. Bulger, 212 S. State St.	Private Office	¾	1
Commerce Clearing House, 205 W. Monroe	Private Office	1	1
Canada Casing Co., 825 W. 47th St.	Private Office	1	1
Consumers Sanitary Stores, 8235 Vincennes	Private Office	½	½
Dennis O'Hare, 6230 S. Ashland	Private Office	½	½
Doering, O. C., 333 N. Michigan Ave.	Private Office	3	3
General Elec. X-Ray Corp., 230 S. Damen	Private Office	1	1
F. H. Halvorsen Co., 3145 W. 63rd St.	Private Office	1½	½
Hardy, Edw. K., 6 N. Michigan Ave.	Private Office	1	1
Hibshman, 105 W. Adams St.	Private Office	¾	¾
Household Finance Corp., 915 N. Michigan	Private Office	2	2
Kelly Richardson, 135 S. La Salle St.	Private Office	1	1
M. L. Typesetting & Electro, 4001 Ravenswood	Private Office	½	½
National City Lines, 1157 S. Wabash Ave.	Private Office	1	1
Quarry, R. H., 35 E. Wacker Dr.	Private Office	1	1
Richardson, Mr. Guy, 231 S. La Salle St.	Private Office	2	2
Rotary International, 35 E. Wacker Dr.	Private Office (Dir.)	5	5½
Camman, Mr. Richard, 2150 N. Lincoln Pkw.	Residence	¼	¼
DesIsles, 1648 E. 50th St.	Residence, Bedroom	½	½
Hoover, Mrs. F. K., 4841 Woodlawn	Residence	1½	1½
Isaacson, Ira, 5327 N. Kimball Ave.	Residence, Bedroom	½	½
King, Dr. Ivan, 5539 S. Cornell	Residence	½	½
Milar, Karl, 10334 S. Leavitt	Residence	1½	1½
Paulsen, Dr. Adolph, 2938 W. Diversey	Residence, Bedroom	¾	¾
Robinson, Mrs. Edna, 4940 East End Ave.	Residence	¾	¾
Spiegel, Wm., 307 S. Dearborn	Residence	½	½
Wilson, Miss Catherine, 4128 Washington	Residence, Bedroom	½	½
Beacon Restaurant, 119 N. Wacker	Restaurant	20	22
Brass Rail, 52 W. Randolph St.	Restaurant	5	5½
Chez Faree, 610 N. Fairbanks Ct.	Restaurant	100	100
Colony Club, 744 Rush St.	Restaurant	15	16½
De Meta, 910 S. Michigan Ave.	Restaurant	7½	8½
Gee Tee Restaurant, 100 E. Ohio St.	Restaurant	20	23
Goldberg Restaurant, 3400 Lawrence Ave.	Restaurant	10	11½
Hardings Restaurant, Morton Bldg.	Restaurant	30	4
Harrisons Restaurant, Railway Exchange	Restaurant	25	27
Hi-Hat Restaurant, 871 N. Rush St.	Restaurant	15	16
Insurance Exch. Tea Rm., 175 W. Jackson	Restaurant	12	16
Jack Huff, 28 N. La Salle St.	Restaurant	15	15
Kai Kai Club, 2218 S. Wentworth	Restaurant	10	11½
Landers Grill, 115 W. Jackson Blvd.	Restaurant	15	16
Manns Rainbow Seafood, 73 E. Lake St.	Restaurant	20	20
Spick & Span Restaurant, 1300 W. Randolph	Restaurant	10	10½
Stevens Bldg. Restaurant, 17 N. State St.	Restaurant	60	60
Thompson's Restaurant, 2745 N. Clark St.	Restaurant	10	10
Joy Candy Store, 6236 S. Halsted St.	Store, Candy	5	5½
Joy Candy Store, 1557 W. 95th St.	Store, Candy	3	3
Bond Clothing Co., 103 S. Wabash Ave.	Store, Clothing	15	17
Lanathan Lingerie Shop, 847 E. 63rd St.	Store, Clothing	3	3½
Mort Cooper, Inc., 161 N. State St.	Store, Clothing	5	6
I. Himmel & Sons, Inc., 322 W. 63rd St.	Store, Fur	5	5½
Burt's Shoe Store, 38 S. State St.	Store, Shoe	20	22
Burt's Shoe Store, 225 S. State St.	Store, Shoe	15	17
Regal Shoe Store, 10 S. Dearborn St.	Store, Shoe	3	3
E.A.R. Theater, 6839 Wentworth	Theater	37	50
Avenue Theater, 306 S. Cicero	Theater	0	6
Total—74 Installations.		653½	694½

Save
90%
of your
Cooling
Water
with the
NEW

"Buffalo"

WRITE for
NEW BULLETIN
NO. 3025



Front view with panel removed—coils, eliminators, spray nozzles and tank conveniently accessible.

Type "ECC" Evaporative Condenser

Water costs for condenser cooling are so high in many cities that they offer a real obstacle to the use of comfort air conditioning.

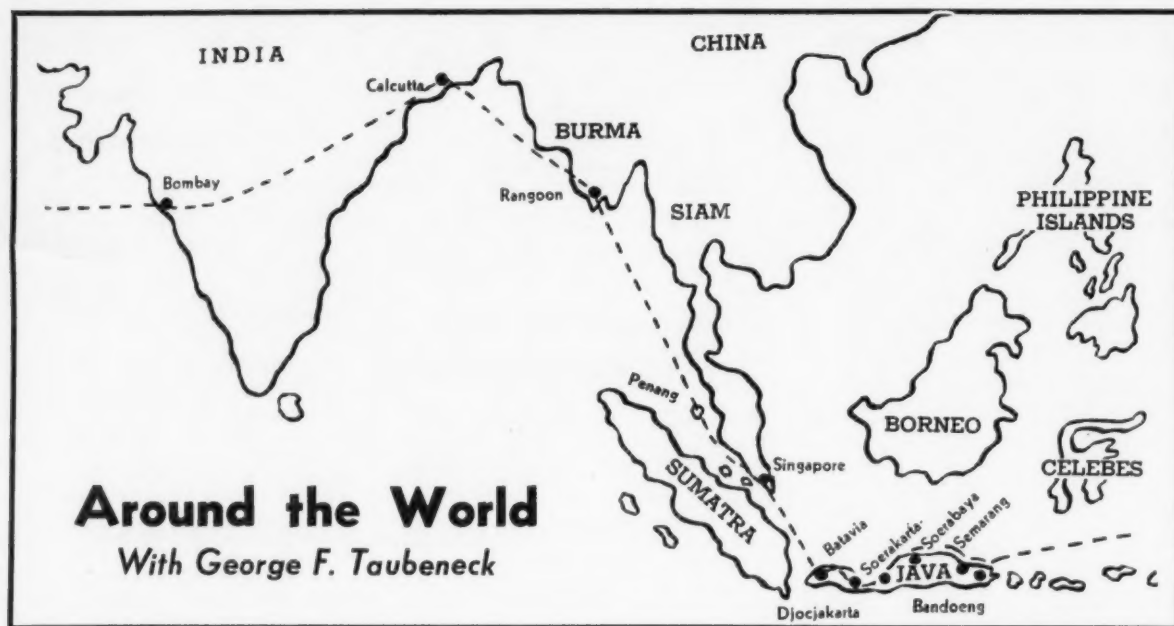
Buffalo Type "ECC" Evaporative Condensers cut these high water costs to a small fraction—to only 10% in fact! With these units, make-up water will not exceed .03 g.p.m. per ton of refrigeration. The necessity for expensive cooling towers is eliminated.

Buffalo Type "ECC" Evaporative Condensers were designed by the same engineers responsible for the highly popular "PC" Conditioning Cabinets. They have been thoroughly tested in service, and are now available in capacities of from ¼ to 52 tons compressor capacity. They are suitable for Freon and Methyl Chloride.

Write today for Bulletin 3025 which gives full specifications.

Buffalo Forge Company
487 Broadway, Buffalo, N. Y.

In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



In this issue George Taubeneck gives his first impressions of Singapore and reports some very interesting interviews with distributors of electric refrigerators in the Straits Settlements area. The Singapore story will be continued next week followed by stories on Penang, Rangoon, and Calcutta.

Also in this issue (starting on page 1) is a description of the Levant Fair in Tel Aviv, Palestine, together with a survey of economic developments in recent years resulting from Jewish activity in Palestine. Additional information regarding Palestine will appear later in its proper place in the travelogue.

During the past few weeks George has been having some hectic experiences with customs officials, strange languages, and other problems encountered in his travels over Europe, but apparently he is enjoying the trip and gathering a prodigious volume of information. His principal worry right now is the loss of a piece of luggage containing 42 pages of copy on India, letters of introduction, and a camera lens.

Somewhat to his surprise George has found that his numerous letters of introduction have not been needed. Everywhere he goes refrigeration men recognize him on sight and know all about his trip from the pictures and articles published in the NEWS.

This week Mr. Taubeneck will fly to Stockholm where he will visit Aktiebolaget Electrolux and investigate the remarkable electrical developments of Sweden.

'Put Controls Outside Cabinet,' Singapore Dealers Request

Surprising Singapore

Singapore has a romantic sound. Most of my friends asked me to send them a card from Singapore. It has the whiff of Oriental intrigue in the nostrils of its syllables. And I must confess I approached Singapore with a this-is-going-to-be-an-adventure-but-I-hope-I-don't-get-bopped-on-the-conk feeling.

How wrong, how utterly wrong! Singapore is a clean, healthful, highly modern English settlement, completely surrounded by old and new China, and the whole set down in the midst of Malaya.

It is the crossroads of the world. The history of every great civilization, from Solomon to the Caliphs of Baghdad to Alexander the Great to the Caesars, to the Holy Roman Empire, to the British and Dutch commercial empires of today, has been influenced by Singapore. Today it is the center of the maritime commerce of all nations. And tomorrow it will be the key, the gate, the most strategic point in the coming conflict for racial supremacy.

The British government is spending vast sums in Singapore today, in a feverish effort to make it an impregnable fortification for land, sea, and air forces. This flow of money into Singapore is making itself felt in local trade.

It's a moral, steady, serious city, Singapore, with a minimum of crime and a maximum of attention to business. For all that, it is a most interesting place; for here mingle three ancient civilizations, Chinese, Malay, and Hindu, each of which antedates our own by many centuries. Here, also, come ships and men from all nations. You can see the world right in Singapore.

Facts & Figures

But to get down to earth and refrigeration: United States Trade Commissioner JULIEN E. FOSTER told the writer that more than 2,000 electric refrigerators were imported into Singapore and the Straits Settlements last year. Up to 1934, only 3,000 units had been sold in the Settlements.

The population of British Malaya (including the Straits Settlements, Federated Malay States, Unfederated Malay States, Labuan and Brunel) is about 4,500,000 of which at least 90% are "coolies," who work for 15 to 40 cents per day.

Singapore has half a million population, of which 80% are "coolies," working for less than 70 cents a day.

Hence the market isn't as big as it looks when one first glances at the census figures. Mr. Foster says that the 39,000 motor vehicle registrations might give a rough idea of the potential market for electric refrigeration.

One thing about the market that looks promising to Mr. Foster is the boom in "flat" (apartment house) building which is now in progress. Each of these flats will have to have an electric refrigerator, he surmises, which should help spread the demand for electric refrigeration from other sources.

Porcelain-finished refrigerators, he finds, are much preferred. The humidity gets the doors of lacquered jobs (distributors in Singapore averred that this statement does not hold true since the coming of Dulux), although no other finish but Dulux and porcelain has been able to stand the gaff.

It is also agreed that motors should be extraordinarily well rust-proofed, and should be oversized. If normally a compressor be powered by a 1/2-hp. motor, it should come equipped with a 3/4-hp. motor for Singapore, where a refrigerator must work very hard all the year 'round.

Still another suggestion Mr. Foster makes is that refrigerators be shipped directly to Singapore on one boat. If they are transferred from one boat to another, say, at Port Said, they are frequently damaged in reloading.

Motors must be 230 volt, single phase, 50 cycles. Electric current is supplied by the Singapore Municipal Power Co., (of which W. W. FULCHER is the manager) for about three U. S. cents per kilowatt hour, and according to Mr. Fulcher, records show that it takes about two kilowatt hours per day to run a 5-cu. ft. refrigerator in Singapore.

Almost everybody—trade commissioner, public utility, distributors, salesmen—agrees that service is the biggest problem the electric refrigeration business has to contend with in Singapore.

Radio sales are running just ahead of refrigerators, Philips radios, Dutch made, are leading the race just now. All sets must be short wave, although a local station is being erected in Singapore, after the completion of which cheaper sets may be introduced.

Practically no other electrical appliances are sold in Malaya.

The Borneo Co.

Most household electric refrigerators in use in the Straits Settlements are General Electrics, although Westinghouse was the sales leader last year. Frigidaire is an easy winner in the commercial division. The Borneo Co., a very big importing and mercantile firm, British-controlled, is the General Electric Monitor Top refrigerator distributor in Singapore and the Straits Settlements. Under the leadership of Salesmanager J. BENNETT, this firm sold 588 Monitor Tops last year.

Some 40 of these were BTH (British Thompson Houston) Monitor Tops, imported from England because they were sold to British Naval base officers, who may purchase only British-made products. They are, according to Mr. Bennett, two years behind the American models. The remainder came from the United States.

Mr. Bennett hires, trains, and directs a staff of European, Malay, and Chinese salesmen. These latter are really several nationalities, even though they may be Chinese, for that race has dozens of well-defined languages, social groups, and grades—for each of which a Salesman of that special classification must be used for the approach.

All these men are trained to tell a story of economy and superiority (of the Monitor Top over all other makes).

The market, Mr. Bennett finds, lies chiefly among European ice users and Chinese coffee houses, and within these groups, he says, canvassing is both feasible and profitable.

Chinese coffee houses, which are organized into "Unions," must be sold on the need for refrigerators. At home they haven't been taught to use refrigeration, and it takes quite a bit of education to get them to see the point.

But Mr. Bennett's men have been especially successful at this job.

For promotion, the Borneo Co. advertises almost every day in the *Straits Times*, using the upper left quarter of page 1. Also this concern maintains a showroom opposite the food market where women from the better class homes do their own shopping.

Monitor Tops are sold on a four-year guarantee in Singapore. So are practically all other makes—having been forced to it by G-E and Westinghouse. A 4-cu. ft. Monitor Top sells for 275 Straits Dollars (about 150 U. S. Dollars).

C. JACKSON is general manager of the Borneo Co., and a most affable, interested person, who knows how to ask a great many intelligent questions in a short space of time.

Sticky Controls

H. C. FAXON is refrigeration engineer of the Borneo Co. He is a very busy man, a business-like man, and a man with a grievance. Why, in the name of all the eternals, he wants to know, do refrigerator designers put the controls inside the cabinet?

(This is a question which was asked us, with varying degrees of profane eloquence, almost everywhere we went in Singapore).

Here is the story:

In Singapore's hot, humid climate, defrosting is naturally frequent. Opening the door to set the temperature control admits a rush of hot, moist air, and the defrosting cycle is accelerated still more.

The result is that much moist air is released around the controls, which eventually jam and stick. A large proportion of all service trouble on refrigerators in use the Straits Settlements can be traced directly to this one cause.

Refrigerators which have controls on the outside do not have this trouble.

Mr. Faxon says he has written a lot of letters about this matter and wishes something could be done to drive the idea home that machines shipped to Singapore should have outside controls.

He has experienced no trouble with insulation, finds the Monitor Top an excellent mechanism, likes Dulux. Rust is somewhat of a problem in this climate, he admits.

Downtown Singapore has DC current, which is a decided nuisance, he declares. The remainder of the Straits Settlements is on AC current.

Mr. Faxon believes that there is a big market among Chinese homes of the better class—a market, he insists that is practically untouched.

News! General Electric Sells Westinghouse!

Your correspondent went down for the count of nine when he found the General Electric Co., of 12 Battery Road, Singapore, selling Westinghouse refrigerators—and doing a real job of it!

Even when it's all explained, it is still rather complicated. The General Electric Co. in Singapore is not the American G-E concern, but is incorporated in England. This firm does not manufacture electric refrigerators (its line is electrical generating, transforming and conducting equipment of all kinds, heavy duty electrical machinery, electrified railroads, and the like). So it obtained the Westinghouse refrigerator agency for the Straits Settlements. Sells nothing else made in America.

Magnet House, maintained by this

concern, is the most modern electrical appliance showroom in town. It was a real joy to walk inside—gave us a feeling of nostalgia.

E. S. HEBDITCH, whose offices are upstairs in Magnet House, considers that the market for household refrigerators in the Straits Settlements consists of 7,000 homes in Singapore, and 8,000 homes inland.

For work inland, Oriental salesmen must be used, he declares. In Singapore, both Oriental and European salesmen are indicated. The European homes do not admit canvassers at all, according to Mr. Hebditch, and must be approached through introductions. Leads are obtained by newspaper advertising.

Westinghouse refrigerators are sold on the 4-year guarantee. The controls have been on the outside, about which Mr. Hebditch grins no end of pleasure. A 4-cu. ft. sells for 325 Straits dollars (roughly 185 U. S. dollars).

Last year Westinghouse led the field in Straits Settlements, with 848 refrigerators. Mr. Hebditch believes he is holding onto this lead so far in 1936.

Emphatically Mr. Hebditch doesn't like the new bottom-mounted Westinghouse refrigerators. It's too hard to get at a bottom-mounted unit when making a replacement, he insists. As for him, he'll sell only the Deluxe line—which still has the unit in the top.

He doesn't like chest models, either. Says they're noisy, and have no appeal for women. Still another kick he has is that shipments of interior glassware do not arrive until some three months after the refrigerator proper, and on these extra shipments he must pay extra freight.

To meet local testing and installing standards, Mr. Hebditch offers these suggestions to all refrigerator manufacturers:

- (1) Ground the secondary winding of the transformer.
- (2) Install a three-core wire on the interior lamp holder, and ground it to the controller.

Another local condition pointed out by Mr. Hebditch is the high cost of water in Singapore—50 cents per 1,000 gallons. This water comes out of the tap at low pressure, and at temperatures of 72° to 75°. Hence it's difficult to use water-cooled compressors in commercial installations.

He believes that this will also militate against air conditioning in Singapore, as will high installation costs, caused by the necessity for closing up the numerous outlets to rooms, and the difficulties of putting in piping.

Mr. Cain Is Able

Two Singapore gentlemen I'll probably remember a long time, because they were so hospitable and kind to me, are T. G. CAIN, manager of the Gramophone Co., H. M. V. distributor for Malaya, and C. M. LEE, manager of Lee & Fletcher, Crosley distributor in Malaya.

Mr. Cain met me at the dock when I arrived in Singapore, and together with Mr. Lee and W. Q. LENNANE of the Gramophone Co., saw me off on the *Karagola*.

On a fine Sunday afternoon Mr. Cain took me out to the finest swimming pool I've ever seen, that of the Singapore Swimming Club. Whilst we swam about in a concrete oval pool 50 yards in length, an old-fashioned band gave a concert! Many fine ladies and their gentlemen were there, too.

Also Mr. Cain took me to hear Reller's excellent Hungarian orchestra give a concert on the lawn out at the picturesque Sea View hotel, which is miles out from Singapore, secluded and restful as a good resort hotel should be. Mrs. Cain, a gracious hostess, gave me a letter of introduction to her brother in Stockholm.

Good music is something I've missed on this trip perhaps even more than good beds, and Mr. Cain's thoughtfulness was greatly appreciated.

Mr. Lennane, his recording engineer, also played some Malayan records for me. They have their own recording favorites, the Malaysians, and while the music is a bit weird and repetitious—which is true of all oriental music—one or two of the native voices were sweet, clear and bell-like.

Gramophone Co. has been recording this music for the big record trade in the Malay archipelago for more than four years; but after the first five months the natives had run out of tunes, melodies, and compositions! Musically they do not appear to be very creative or inventive.

To solve the problem of turning out new records to meet the demand, Gramophone men began introducing European tunes and American dance music, which the native musicians have interpreted in their own manner. To hear a popular Malay male falsetto (as clear a soprano as I've ever listened to on a record) sing his version of the famous BING CROSBY number, "Thanks," was an experience.

(Continued on Page 9, Column 1)

Norge & Westinghouse Showrooms



Left: Robinson & Co., Ltd., HMV (Norge) distributor in Singapore. The scene is typical—all sidewalks in the business district are semi-enclosed. Right: Surprise! General Electric Co. sells Westinghouse in Singapore. This dealer is the city's largest, and sells the most refrigerators.

Around the World

With George F. Taubeneck

(Continued from Page 8, Column 5)

The Gramophone Co. has been in the refrigeration business in Singapore for little more than a year, selling HMV refrigerators (Norge, made in America, sold throughout the British Empire by Gramophone Co. branches and agents).

This first year, though, was more than successful. Every dealer in Malaya is sold out, and has been for weeks! They're all awaiting impatiently forthcoming shipments of 1936 models.

Which proves, I should say, that Mr. Cain is able. In one year he has solved the intricate problem of selling to the descendants of Ham, Shem, and Japheth. (Now if we could only work Adam into this same way—ah, we have it! He could sell more refrigerators if he 'ad 'em!)

What sticks in the craw of Gramophone Co. men in Malaya is the four-year guarantee. They don't like it, don't want it; but say they are forced to give it.

It hasn't cost them much so far, but they are afraid it will. Service costs in Malaya are high, they say, for two reasons: (1) transportation costs of sending service men out to take care of machines in the interior and (2) the necessity for importing an European or American service man.

Malay mechanics, they agree, are clever, and reasonably cheap. But they must be taught and supervised. That calls for bringing a man half way 'round the globe, paying him transportation and paying him a darned good salary to stay.

Gramophone stores are sticking to porcelain models, and report high user satisfaction thus far. Out there the HMV name has a big following, and the stores which display the sign of the dog listening to the old-fashioned gramophone invariably have a strong flow of floor traffic. From these people come the prospects which salesmen follow up. They do no canvassing.

Headquarters of Mr. Cain's organization are located at 147 Killiney Road, Singapore.

C. M. Lee—Crosleys, Cars, and Cameras

C. M. LEE, the Crosley distributor, is one Chinaman with whom the writer seemed to have a great deal in common. In the first place, he is also the Auburn motor car distributor in Malaya, and an enthusiastic follower of the exploits of the Auburn speedster we used to write about—stories which he has used with signal success to sell Auburns in and around Singapore.

(While we're on the subject, we've found the greatest curiosity about that car among readers of the News ever since leaving the United States. High-powered cars are rare in the southern hemisphere and in the east, and our speedster excited the imaginations of all sorts of business men and engineers in Hawaii, New Zealand, all over Australia, Java, and Singapore.)

Secondly, Mr. Lee is the proprietor of the Singapore Photo Co., the biggest photographic business in Malaya. We didn't discover that until after we had taken an armload of exposed negatives down to the Kodak branch for developing, worse luck.

But one of his sons, an expert photographer as well as a good salesman, did give us some excellent advice on the use of filters, and we bought a couple. Also he fixed our reserve camera, a National Graflex, which had been on the fritz ever since that memorable deep-sea fishing expedition down at Jervis Bay, Australia; and did a neat job of packing a flock of films for shipment back to the United States.

Mr. Lee is a fine example of the high type of Chinese merchant who has done so much to develop the Malay archipelago. Honest even beyond American and European standards, extraordinarily industrious, and sound business men to the core, these men have founded mercantile businesses which have grown and prospered and which, in the hands of sons and grandsons, frequently become commercial dynasties of vast reach and power.

After meeting and talking with his two well-educated sons, we might hazard a guess that the Lee family might well be on the road toward becoming a dynasty. Two daughters are now in America studying music and art.

Mr. Lee took me into his luxurious home, where he and his charming wife live quite like well-to-do Americans. Despite his European manner, dress,

and habits, however, Mr. Lee loves things Chinese, and delighted in taking me on trips through Chinese streets, into Chinese temples, up into Johore, to Chinese rubber plantations, and did much to help me see and try to understand something about that most ancient of all civilizations, the Chinese.

Mr. Lee's automotive establishment was in the same fix with relation to Auburns that the Gramophone Co. was with HMV refrigerators—sold out. He also has the agency for Graham motor cars, however, and for that unique English automobile, the Jowett "flat" two- and four-cylinder (horizontally opposed, rather than vertical cylinders).

We went for rides in a Graham supercharger, Jowett twos and fours, and a trade-in Buick; but no matter what car we took out, we ended up

by pushing it! That was a source of grave embarrassment to Mr. Lee; but it helped both of us decide that the Auburn is an O. K. car.

Oral Quiz

While we deeply appreciated Mr. Lee's personally conducted tours into China-in-Singapore, and into the Sultanate of Johore, we weren't able to flatter ourselves that he was doing it simply because we were a nice young

feller. It was, as a matter of fact, an opportunity for him to ask questions.

He tried to fathom, through me, the way some radio manufacturers—at present he doesn't handle any make, out of sheer disgust—do business. All kinds of questions, some of them almost intimate, he asked about manufacturers of refrigerators, air conditioning, parts, accessories.

He wanted to know in detail how American distributors operate, how they promote sales, how they figure

selling costs, how they handle services, how they devise and direct advertising campaigns. And, like many an other, he wanted to know why in the name of the bearded dragon do refrigerator designers put the controls on the inside.

After servicing the controls on one job three times in a week, he adopted the policy of changing the controls to a position in the top of the cabinet with the compressor, away from

(Concluded on Page 10, Column 1)

Singapore's Crosley Distributor



C. M. Lee and his son, Crosley distributor heads in Singapore, look over their sales manuals and add current material to it. Center: Shelvador refrigeration is prominently displayed on the outside of Lee & Fletcher showroom headquarters. Right: Interior of the showroom, where Crosley products are invitingly displayed.

LOOK WHAT HAPPENED!

Motor Parts Company
FARMINGTON AVENUE AT 4TH STREET
PHILADELPHIA, PA.
June 10, 1936

Bright Company
HARDWARE, SPORTING GOODS
ELECTRICAL AND RADIO APPLIANCES
PLUMBING AND MILL SUPPLIES
EIGHTH AND ELM STREETS
READING, PA.

General Household Utilities Company
2338 NORTH CRAWFORD AVE. CHICAGO-
2630 NORTH CRAWFORD AVE. CHICAGO-
WE HAVE GREATLY UNDER ESTIMATED OUR REQUIREMENTS FOR SETS
UP TO AUGUST FIRST AS COVERED BY ORDERS PLACED AND WILL
SPECIFY ADDITIONAL SHIPMENTS EARLY IN WEEK-
D. B. WILLIAMS - WILLIAMS DISTRIBUTING CO.

Western Union
48176 145CL HARTFORD CONN 18 1224P
GENERAL HOUSEHOLD UTILITIES COMPANY-
2638 NORTH CRAWFORD AVE. CHICAGO-
CONSIDER THIS AUTHORITY TO RELEASE FOR IMMEDIATE SHIPMENT
ORDERS ORIGINALLY SCHEDULED FOR JULY STOP WILL WIRE
DEFINITE SPECIFICATIONS ADDITIONAL ORDER TOMORROW-
FRANCIS STERN - STERN & COMPANY

Postal Telegraph
THE INTERNATIONAL SYSTEM
55 SOUTH WILSON
CHICAGO, ILL.

F.B. CONNELLY COMPANY
Northwest Distributors
CHICAGO, ILL.

GRUNOW
12 1 2 3 4 5 6 7 8 9 10 11 12
100 200 300 400 500 600 700 800 900 1000 1100 1200
1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400
2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600
3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800
4900 5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000
6100 6200 6300 6400 6500 6600 6700 6800 6900 7000 7100 7200
7300 7400 7500 7600 7700 7800 7900 8000 8100 8200 8300 8400
8500 8600 8700 8800 8900 9000 9100 9200 9300 9400 9500 9600
9700 9800 9900 10000

WHEN DEALERS SAW GRUNOW'S Sensational 1937 Line

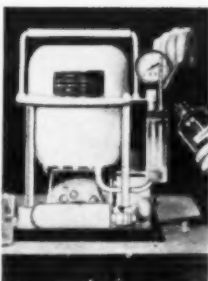
THE landslide to Grunow has started. Again Grunow is leading with that "plus" in its merchandise that builds bigger volume and faster profits!

In radio this "plus" is TELEDIAL—the amazing new fool-proof automatic tuning. The first practical device of its kind! The first improvement in years customers can look at—understand—play with and demonstrate to themselves. The hottest floor-traffic builder you've had in years. Other features galore, only second to TELEDIAL in selling power!

SAFETY YOU CAN DEMONSTRATE



Grunow alone of the 32 refrigerator manufacturers stresses safety! And because of its utter safety GRUNOW can give you a home demonstrator model—the only manufacturer who supplies you this vital selling aid, which makes ice before the prospect's eyes—shows the whole cycle of electric refrigeration.



And in refrigeration Grunow's "plus" is the amazing exclusive vacuum circulation that makes it possible to use CARRENE, the super-safe refrigerator.

Next Sunday newspapers all over America will open the Grunow drive for radio leadership with smashing ads on TELEDIAL. Prospects everywhere will be going to see and test this amazing new development that brings a new thrill in radio! They'll be running to you if you get on the band wagon now. Write or wire so you can have a floor sample to cash in on this sensation!

Grunow
All-Wave Radio for 1937

GENERAL HOUSEHOLD UTILITIES CO.
CHICAGO, ILLINOIS MARION, INDIANA
Manufacturers of Grunow Super-Safe Carrene Refrigerator • Grunow Household Radios
Grunow Automobile Radios

FIRST RADIO IMPROVEMENT IN YEARS THAT PROSPECTS CAN SEE AND DEMONSTRATE TO THEMSELVES

GENERAL HOUSEHOLD UTILITIES CO.
6000 North Pulaski Road, Chicago, Ill.

Send me the full facts about the new TELEDIAL and put me in touch with the nearest Grunow distributor today.

Name.....

Address.....

Town..... State.....

Around the World

With George F. Taubeneck

(Concluded from Page 9, Column 5)
the food compartment. Now, instead of opening the door to set the temperature control, his customers lift the lid.

He, too, has gone to the four-year guarantee, against the express advice of the manufacturer. When he had only the one-year guarantee, prospects would say to him: "Your machine can't be so good as the others, or you would guarantee it as long." So he now gives his own four-year guarantee on all refrigerators he sells.

Coldspot and Fairbanks-Morse refrigerators are also on his big show-room floor, but he hasn't sold many. The Sheldor feature has great appeal in Singapore, he finds. He has sold more than 200 in two years. Previous to Crosley refrigerators, he sold Majestic.

Mr. Lee advertises Crosley extensively using half-page newspaper space. He does not get a factory advertising allowance.

You might think that he would have had considerable success with "that great untouched market," the well-to-do Chinese families in Singapore. But here he has had to fight that centuries-old supposition of the Chinese that cold food is bad for the stomach.

He has been able to prove to Chinese coffee house owners, however, that their patronage and their profits go up after they have installed an electric refrigerator. In addition to the food savings, it appears that the Chinese like a cold drink far better than a warm one, once they try it!

Frigidaire Pioneers

Frigidaire has been handled in Singapore for years by Paterson, Simons & Co., one of the oldest and biggest commercial houses there. This concern's business includes shipping, insurance, pineapple canning, irrigation, pipe line building, and big engineering construction jobs of all kinds.

For some time Frigidaire had the refrigeration market practically sewed up, but has let it slip away during recent years. Paterson, Simons sold about 150 units last year.

To retrieve Frigidaire's place in the sun, Francis W. Allen has been imported from Ceylon, where he has been pushing Frigidaire successfully, to take over all sales and service direction in Singapore.

Mr. Allen is starting off in true Frigidaire fashion: he is holding a daily sales training school! At present he has five promising Chinese salesmen under his tutelage. Every morning they come in for a lecture, and once a week take an examination.

The Chinese market is the one Mr. Allen is going after, hammer-and-tongs. Here's how he figures it:

There are 12,000 Europeans in Singapore. Of these, 4,000 belong to the Army or Navy, and must "Buy British." That leaves 8,000, and of these, 3,500—more than the cream of the market—have already been sold.

On the other hand, there are 350,000 Chinese residents in Singapore. They have money, enterprise, and like to live well. It looks as simple as ABC to Mr. Allen; the Chinese provide the market worth cultivating.

According to Mr. Allen, Frigidaire sold 12 1/2% of the household total in Singapore last year, but got 59% of the commercial business. Despite this high position—one which Frigidaire has held for years—he feels that the commercial market has scarcely been scratched.

Shortly before I arrived he had just closed a deal for refrigerating an 11,000-cu. ft. room in a distillery. Now that, he rejoices, is something like it.

Furthermore, Frigidaire is pioneering air conditioning in Singapore. Already Paterson, Simons has sold a dozen dehumidifying plants for telephone exchanges, and estimates are being prepared in answer to several inquiries.

In the antique Paterson, Simons offices one room has been insulated for demonstration purposes.

It is Mr. Allen's contention that in Singapore humidity control is needed much more than temperature control. He doesn't believe in reducing the relative temperature more than 5° or 10°; and this rule is followed in the demonstration room. If it's 85° outside, inside the room the thermometer shows 80°.

Air Conditioning

So far as we could learn, there are no bona fide air-conditioning installations in Singapore. Solo Air, 302 Orchard Road, has sold 37 air-circulation plants, but these have no cooling or dehumidifying provisions.

Carrier has just entered the market, under the banner of the United Engineering Co. Secretary JOPP of that concern could not be reached when I tried, but I was told no installations had been made up to that time. Some newspaper advertising is being done, however.

The same difficult-to-handle conditions prevail in Singapore that do in Java: high ceilings, many vents, large open windows, no insulation. Rooms which have been built to be cool and comfortable are hard to make more comfortable and cooler mechanically.

But air conditioning would be welcome in Singapore, and would undoubtedly raise the efficiency of office workers. It's also needed in sleeping rooms. Here again, we think the air-conditioning bed could be sold.

(1) Everybody sleeps under a canopy, and usually with a noisy overhead fan going—thus making them accustomed to the conditions which cause the two common objections to this device in America.

(2) The relative difference between the cost of installing an air-conditioning system for one of those high-ceilinged, open rooms and buying an air-conditioned bed would be so great that the latter would seem cheap indeed.

Patterson Disciple

If Frigidaire has slipped a bit in Singapore, Kelvinator seems to have slipped much further. It was scarcely in the race last year; and to save HENRY BURRITT from a severe case of apoplexy, we won't even quote the figures.

But all that is being changed. A different agency now has the franchise, Brinkmann & Co., concerning which we heard good things from all their competitors. The switch was just being made during our stay.

We met J. F. A. SWALLOW and JACK RITCHIE of that concern, and were highly impressed. Mr. Ritchie was trained in the National Cash Register organization and, of course, is a devout disciple of JOHN PATTERSON.

He got his introduction to ELECTRIC REFRIGERATION NEWS before he knew he was going to be in the refrigeration business, through having the writer's long series of articles on Patterson and his methods—which he says he enjoyed hugely—called to his attention.

Saw GEORGE MURREY, Kelvinator representative in the Far East, several times. The tropics had got him. He had suffered two attacks of malaria, and three of dengue fever, and was a whipped man if we ever saw one.

Went to call on him early one morning, and found him in a dengue relapse. Right then and there we decided we wanted none of that. Two days later we saw him off on a boat for Hong-Kong, whence he will return to the United States.

Definitely we have the feeling that George hopes he never has to look a palm tree in the face again.

Others Present

Both kerosene and electric Gibson refrigerators have been sold, spasmodically and desultorily, by WILLIAM JACKS & CO., a trading firm which has offices in the Ocean Bldg., Singapore.

We called on J. MILLER of that firm, who stated that most of his sales had been made via mail order,

Dealers and Users



Above, left: A section of the showroom of Robinson & Co., Ltd., HMV-Norge dealer in Singapore. Right: A big Westinghouse refrigerator stands out in the food department of one of Singapore's little stores. Below, left: Offices of the Borneo Co., General Electric distributor, are in this fine building in the center of Singapore's business district. Right: One of the Borneo Co.'s installations, in a Chinese restaurant in Johore.

to homes on the "Stations" (tin mines, estates, rubber plantations) in the interior.

This type of business is not at all profitable, he found, because of the high cost of servicing. But a good customer may include an order for a refrigerator in a big list of things wanted (possibly \$14,000 worth) and so it's supplied just to keep him happy.

Jacks & Co. has had several orders for air conditioning, and is decidedly interested. It's Mr. Miller's sound contention, though, that any manufacturer which would make a connection with his firm on air conditioning would have to send a trained engineer to Singapore right from the start.

"If an installation would fail in this climate—and this would be a real trial for any job—it would be very, very bad unless a competent engineer were on the job," he declares.

Henry Waugh & Co., with offices in Raffles Place, sold about 50 Grunow refrigerators last year. This firm is also highly interested in air conditioning, and will welcome correspondence on the subject.

Still another prospective air-conditioning factor in Singapore is Sime,

Darby & Co., 5 Malacca Street (write to Mr. Piercy). This concern is now engaged in air conditioning a room in one of its offices, using a system devised by company engineers.

Sime, Darby sells Electrolux refrigerators, obtaining them from England and Sweden. Last year 130 were sold, chiefly of the oil-burning variety. More than 300 of these have been sold within the last three years to places in the interior of Malaya, where electricity is not available.

Because of high prices for oil, the operating cost of these jobs is quite a bit higher than electric refrigerators, so sales in Singapore have not been large. No natural gas is available.

A brand new factor in the refrigeration business is the entry of cheap Japanese-made electric refrigerators into Singapore. About 50 of these were sold in Singapore last year at prices ranging around the \$70 mark.

Aourhwen Fosoqn Co., Ltd., 6 Battery Road, is the importer. Two brand names are on these refrigerators; Nashimoto Kurume, and Hashika Samsel. There are none on display, nor did anyone show us one installed, so we have no details as to the design.

COPELAND
Commercial
REFRIGERATION

COPELAND REFRIGERATION CORP. Holden Ave. at Lincoln - DETROIT

Precision-Built for
LONG LIFE

71 MODELS

1/4 TO 60 H.P.

THE BAKER LINE OF SELF-CONTAINED UNITS OFFERS A TYPE AND SIZE FOR EVERY REQUIREMENT

The Baker line has everything! Efficiency, dependability and long life are built into every model by the famous precision methods of Baker machinists and engineers. 44 models especially designed for air-conditioning! 33 for refrigeration! Two and four cylinder types in the industry's most complete range of capacities! And in addition they present a clean-cut, modern appearance that helps sales.

The demand for Baker units is growing fast—sell one and its performance will sell many others. Distributors and dealers interested in handling this pioneer line of equipment are requested to get in touch with us immediately.

BAKER

ICE MACHINE COMPANY, INC.
1587 Evans St.
Omaha, Neb.
Internationally Represented.

RIGHT DOWN THE LINE

NEW C-H Replacement Control Has EVERY FEATURE YOU WANT

The famous Cutler-Hammer Control, time-tested on a million refrigerators ... is now available as a replacement unit.

Here are a few reasons for its popularity: Sure protection to motor, wide-range cold control, modern appearance, proved performance.

And here are Service Facts for the Service Man: 4 MODELS FIT NEARLY EVERY BOX. With two temperature models in 24" and 48" tubes or two pressure models for sulphur dioxide and methyl chloride systems—you're equipped to service 99% of the boxes in your community ... with smaller stock, less money tied up, faster turnover, bigger returns, no shelf losses.

EASIER TO INSTALL; EASIER TO ADJUST. Unit mounts either horizontal or vertical, just two screws to insert. Differential and range adjustment made easily.

Every day more of the millions of old refrigerators move into the zone where they need repairs. With C-H Control that fits 99% of these boxes, that provides every advantage, it is easy to get the customer's O. K. CUTLER-HAMMER, Inc., Pioneer Manufacturers of Electric Control Apparatus, 1362 St. Paul Avenue, Milwaukee, Wisconsin.

Send NOW

For full facts on this profitable item. FREE Booklet gives all information, diagrams, etc., also Replacement Control for popular make Beverage Coolers and Ice Cream Cabinets. Same simple, reliable, proven mechanism. Call on your nearest jobber for stock.

CUTLER-HAMMER
REFRIGERATION CONTROL FOR REPLACEMENT SERVICE

Fort Wayne Utility Inaugurates Dealer Cooperative Plan to Promote Sales Of Ranges and Water Heaters

By T. T. Quinn and Winifred B. Hughes

Display Room Revamped to Focus on New Program

Introduction of a new dealer cooperative plan, devised chiefly to pioneer the sales of electric ranges and water heater units in this city, is the current activity which Indiana Traction Light Service Corp. is conducting in an effort to increase its domestic current users.

First step of the campaign involved the complete revamping of the entire front section of the power company's display room at its central office at 122 E. Wayne St. In this room, distinctive with its lowered ceiling, circular pillars, neon lighting, and blue-and-cream decorative scheme, a refrigerator, range, and water heater display representing all dealers in the city is arranged.

Centered on the side of the room is an all-electric kitchen completely equipped with a G-E kitchen sink unit and dishwasher, Westinghouse range and refrigerator, a water heater, and planned cabinet units.

Pioneering These Appliances

"Range and water heater sales have not been good in this territory, so we are turning all our efforts towards pioneering these two appliances in Ft. Wayne," declared Lawrence E. Goble, manager of the utility's merchandising department.

"Our plan is to feature a continual series of dealer displays, rotating the products every two weeks or so, so that no special spotting will be given to any one company, and changing the entire show at frequent intervals.

"Electric refrigeration sales have been keeping up to a pretty good pace here, so we aren't doing anything special to promote them, other than include models in our exhibitions.

"This present display, which we plan to change July 5, has been up for the last five weeks. Mrs. Ruth Ragedanz, head of our home service division, is on the floor most of the time, to demonstrate the appliances, and to answer customers' questions concerning features of the products on the floor."

Advertising Program

The utility has used two newspaper advertising insertions a week in local papers to publicize the sales drive. Through the advertising, and through personal contact, the merchandising division has urged dealers to tell their prospects about the show, and to bring them down to see it.

"We promised the dealers when we started the drive that we would make no effort to sell one piece of merchandise in preference to another. But we found that in keeping to this policy, a lot of good selling ability was going to waste here on the floor," Mr. Goble stated.

"So we solved the problem in this way," he continued. "We had a number of cards printed, addressed to us, and containing space for writing in the prospect's name and address, and that of the dealer and salesman, and space for indicating the make and model of appliance in which the bearer is interested. The cards contain a written request that we demonstrate the model signified to the prospect."

"This gives us authorization to stress the sales factors of the appliance which the dealer's prospect is interested in buying, and through this method, we have been able to aid the dealers in closing a number of 'tough' sales. It is a fair arrangement, because it prevents favoritism, and yet allows us to work right with the dealers."

In addition to institutional and educational advertising copy, run in local newspapers, the utility uses envelope stuffers inserted in its customers' bills, as promotional mediums. In these, sales suggestions on electric ranges and water heaters are tied in with reminders of the lowered electricity rates (which are two cents for the first 25 kwh. on domestic electrical appliances), Mr. Goble said.

Realizing the importance, both to the utility, and to the individual dealers, in backgrounding its drive with salesmen training, the utility's campaign will include an extensive educational program, the merchandising manager stated.

"We plan to hold a series of meetings for the dealers and their salesmen to train them in merchandising methods. At the meetings we will stress the selling points common to electrical appliances which we are promoting, rather than adhering to any one manufacturer's sales manual."

The one big difficulty in carrying out the plan, according to Mr. Goble, lies in the rapid rate of salesman turnover in dealerships throughout Ft. Wayne.

"What we are going to have to do to cope with this situation," he said, "is hold an initial series of meetings, and then keep repeating them from time to time."

To obtain leads to range and water heater sales from its employees, the Indiana Traction Light Service Corp. sponsors a drive in which a \$2.50 bonus is offered for every lead (on which a sales is closed) turned in by one of its personnel.

It also supplies dealers with the services of Mrs. Regedanz's assistant, Miss V. Livingston, whose work includes follow-up calls on range and other appliance sales to instruct the customer on how to use the appliance.

Companies represented in the current display set up in the new show-room include: Stucky Bros., Inc., W. J. Barth Co.; Frank Dry Goods Co.; E. A. Barnes Electric Appliance Co., Inc.; C. H. Lines Co.; Grand Leader department store; Samsen Radio & Electric Shop; Garmire Goette, Inc.; Heat & Cold Co.; Wagnor Furniture Co.; Rothberg Furniture Co.; Home Supply Co.; Hadley Furniture Co.; Sears Roebuck, and Wolf & Desseau department store.

Next week, Westinghouse and Nesco electric cookers will be featured in the power company's product display.

Ice-O-Matic Business Is Better Outside Ft. Wayne

Household refrigerator business outside Fort Wayne has been much better, this year, than in the city itself, take it from R. L. Romy, manager of General Equipment Co., Williams Ice-O-Matic distributor.

"Price has been to much of a factor for the good of the business in Fort Wayne," Mr. Romy believes. "Two of our competitors (whose names he withheld) are offering 6-cu. ft. models for sale at prices at least \$30 under any figure we can touch—unless we want to lose money on the sale."

"They have been pricing these models at around \$129.50—our price runs all the way from \$160 to \$170."

Price and Repossessions

Repossessions have shown a marked increase during the past year, too, and Mr. Romy believes the price situation has a lot to do with this, in his case at least.

"You can sell your refrigerator to a prospect," he said, "and after he's had it for a month or two, he finds out he could have bought another model, of the same size, about \$30 cheaper."

"So what does he do? He lets his refrigerator go back—not because he's dissatisfied with it or its performance, but simply because he figures he's paid too much for it. Nine times out of 10, he'll turn right around and buy one of those he can get for less money."

"You can't put the blame entirely on the customer—after all, he's interested in saving all the money he can. But something ought to be done to make prices a little more stable, just for the good of Fort Wayne dealers as a whole."

Price-Minded Customers

City customers are very price-minded, Mr. Romy says. It seems they are always looking for a bargain—and they'll shop around until they think they've got one. Prospects in the smaller towns—who, incidentally, are better pay, Mr. Romy says—are not so much interested in price.

"How about service?" they ask. "Most of the business in the smaller towns is straight cash," Mr. Romy said. "Those few who do want credit, try to make their down payment as large as possible. And repossessions are no problem at all. When these people buy something, they plan on keeping it."

"They want service—that's one thing they invariably ask for. The man who can't show them a good service record had better not go after their business, for he's only wasting his time."

"When anything goes wrong with their equipment, they want to be sure they can get it fixed in a hurry. If you can take them around to some of your customers, and let them find out for themselves that your service

record is good, there's little else to do but have them sign the order.

"Service means almost everything to country customers."

"We're just about ready to give up Fort Wayne as a bad job, and concentrate our efforts in the smaller towns."

Building activity in Fort Wayne will increase this year, Mr. Romy predicts—and he should know, for he's in the real estate business as well.

"People are crying for houses," he said. "Rents are going up—we raised all of ours last month—and still there are no vacant houses in the city. So there will be considerable home building in Fort Wayne this year—there'll have to be."

Another market for refrigeration in the city, Mr. Romy believes, will be in apartment houses, as multiple systems are gradually replaced by individual units. He himself is changing over to unit systems in two apartment buildings he owns.

His plan is to install condensing units in the models now on the multiple hook-up. His problem, when we came in, was "where to buy." But we picked up the copy of the News on his desk, thumbed through to the Buyer's Guide columns—and when we left, some company had found a new customer.

Dept. Store Sells \$17,000 Worth of Frigidaires in May

Frank R. Bookmyer, head of electric refrigeration sales of the electrical appliance department of Wolf & Desseau, leading Ft. Wayne department store, was reading his copy of ELECTRIC REFRIGERATION NEWS when the writer walked in to see him.

Mr. Bookmyer's initial assertion that "Business is very, very, good," had behind it some Capital Letter Reasons. Why in the department's May sales record, for its Frigidaire sales in that month approximated the \$17,000 mark—\$10,400 of which figure represented Mr. Bookmyer's personal sales achievement for May.

"A thoroughly good job of selling the box on its merits," this factor, in the department store representative's opinion, takes precedence over a large selling force, showmanlike or unusual promotional stunts, or any other method in establishing a high sales volume.

Privacy for Customers

Handling Frigidaire refrigerators, and Westinghouse ranges, the appliance department is located on the fourth floor. Its chief locational handicap—not being directly in front of the store elevators—is, in a sense, an advantage, for it sets the department a little apart from the other merchandising sections on the floor, and thus gives the customers a degree of privacy, Mr. Bookmyer said.

Advertising 1935 units as "specials," is the chief means for building floor traffic used by the refrigeration department. "We feature these 'special' sales in connection with all our store-wide selling drives, and as a regular monthly attraction from the first of March until June," he said.

Average amount of refrigeration advertising featured in the store's newspaper insertions is about two full-pages a week, part of which is run in quarter-page layouts, in the city's morning paper. "We try to have our advertising reflect the dignified stability which characterizes the store's policy," Mr. Bookmyer said.

Three men, working under the electrical appliance department's manager, Mr. Chapman, comprise the store section staff. One heads the refrigeration, another the range, and the other the washing machine sales, although all three sell the complete line of electrical appliances carried on the floor.

Effect of FHA Financing

The FHA financing plan definitely influenced the 1935 refrigeration sales made by the store, according to Mr. Bookmyer. It was especially important in increasing its companion sales, he stated.

"I think that a lot of people who ordinarily might have hesitated to purchase a single major appliance, took advantage of the low-term, long-payment plan offered by the FHA, to buy not only a refrigerator, but also a range, where both appliances were needed. We made a number of double-unit sales on FHA plans, at any rate," he said.

The store has formulated a special financing plan of its own to supplement that previously offered by the Federal Housing Administration. It involves a 5% carrying charge, and has a long term payment basis.

"We take no trade-ins, and make no allowances for the customer's old refrigerator, in our selling. We've insisted so consistently on this policy that we almost have the rest of the dealers in Ft. Wayne sold on the idea," Mr. Bookmyer stated.

Each year Wolf & Desseau runs a store-wide cooperative campaign to enlist its employees as refrigeration sales-lead contributors during the month of July. Under the plan the employee gets a chance on an electric refrigerator for every lead turned in, on which, when checked up, the prospect

proves definitely to be in the market for an electric refrigerator.

"Last year we sold 60 Frigidaires through leads turned in during the campaign," Mr. Bookmyer stated.

While nothing in the way of additional promotions, is done to get leads from users, they are a valuable source of new sales leads. "We have sold as many as eight boxes from a single contact," he said. "Just last week I sold three refrigerators to members of the same family. We endeavor to maintain friendly relations and obtain the good will of our customers right from our first contact with them."

Sales Training Method

The best method of teaching new salesmen how to sell electrical appliances, believes Mr. Bookmyer, who was among the Frigidaire sales leaders for 1935, is to let them watch a veteran salesman in action. "In this way they absorb the technique employed by someone who has had a lot of experience, and they can form their own methods from his example."

Handling one line exclusively has many advantages, in Mr. Bookmyer's opinion.

"It's much easier to sell one line," he said. "When you carry more than one, and the customer is undecided, you have to be so careful not to knock one line, or to favor either box, because the feature which you 'talk up' in one box, may be lacking in the other."

"Then too," he continued, "when a customer says, 'which do you like?', as they often do, you are up a tree, and you can't honestly tell her what you think. With one line, you can be completely sold on your product, and you can devote your whole attention to stressing its sales points, rather than having to compare two or more boxes."

Economy of Operation First

Economy of operation is the first thing that most refrigerator purchasers who come into the department store ask about. "There has been so much emphasis placed on the 'meter miser' this year that people seem to want to hear more about it, before they ask about any other selling point."

Although a great number of his refrigeration sales are one-call sales, the department store representative said, evening follow-up calls on prospects who need additional selling are all "part of the job."

"I never make more than four or five calls on one prospect, because I feel that after that number of contacts, if they are going to buy at all, they will come in and buy of their own accord."

When the electrical appliance department at Wolf & Desseau's was recently remodeled and modernized, one end was converted into an all-electric "Twentieth Century" kitchen. Compact in size, the kitchen contains

a Frigidaire, Westinghouse range, dishwasher, water heater, Monel metal shelves, desk, chair, and a kitchen radio.

Serving both as a center for home economist electric range and refrigeration demonstrations and as a floor traffic builder, the kitchen also has attracted a number of people who are building new homes here into the store, Mr. Bookmyer said.

"Since the kitchen was installed, one of our store executives has duplicated it exactly in remodeling the kitchen in his own home," he added. "The same color scheme, equipment, and group arrangement were followed in his new kitchen."

Two recent home economics demonstrations were conducted in the department store electrical appliance department by representatives from Frigidaire Corp. and Westinghouse Electric & Mfg. Co.

6 and 7-Ft. Models Are Best Sellers for Westinghouse

May household sales were 200% ahead of their figure for the same month last year in the territory covered by National Mill Supply Co., Westinghouse distributor in northern Indiana, according to Charles Watterson, manager of the company's refrigeration department.

Mr. Watterson wasn't in, though we made two call-backs to see him—so we finally found him, by telephone, at his home.

For the first five months of the year, the company is showing a figure 134% ahead of 1935 sales for that period, Mr. Watterson added.

Best selling models, he said, are the 6- and 7-cu. ft. sizes, the company finding it difficult to keep enough of them in stock to meet dealer demands.

Business has been good in Fort Wayne itself, Mr. Watterson said, but even better in the towns surrounding it. The company covers 14 counties in the Northern part of the state, operating 24 dealerships—"a 100% set-up," Mr. Watterson termed it.

National Mill Supply has been active in Fort Wayne this year. As evidence of this, Mr. Watterson points with pride to the fact that the company landed the business in the only two apartment house deals made in the city thus far. The orders totaled 21 units, all of them of the 4- and 5-cu. ft. variety.

Particularly encouraging to Mr. Watterson, however, has been the activity shown by his dealerships in the smaller towns. This activity, he is careful to point out, covers not only refrigerators, but electric ranges as well.

Three of the best are in Columbia City, Decatur, and Huntington. In the first city, the dealer sold 29 refrigerators, and 35 electric ranges; in Decatur, the record is 28 ranges; and Huntington tops them all with sales totaling 38 units.

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for electric refrigeration and air conditioning applications — domestic and commercial.

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VOL. 18, No. 8, SERIAL No. 379
JUNE 24, 1936

"For the Good of The Industry"

SINCE the publication, in the May 27 issue, of the editorial on "Fear Appeal in Advertising," criticizing the Grunow Co. advertisement ("Worse Than Fire") which appeared in the same issue, various arguments have been offered in support of the proposition that we should have refused to publish the advertisement.

From our neutral position, some of the arguments appear to be utterly illogical and fantastic. It is entirely clear to us that if we attempted to follow some of the policies which have been proposed, the influence of the paper would soon be completely demoralized. But since certain other publications have rejected Grunow advertisements (according to reports), we believe that further discussion of the subject is desirable.

We are informed that Curtis Publishing Co. refused to accept the Grunow advertising last year until the copy was revised so as to conform with regulations for the *Saturday Evening Post*. We are aware that this great institution has had a profound influence upon advertising practice and that it has been richly rewarded for its constructive work. Considering the fact that millions of dollars have been spent for advertising electric refrigerators in the *Post* we have no doubt that its management is very familiar with the interests of the large manufacturers.

Electrical Industry History

We are also informed that McGraw-Hill publications have refused Grunow advertising, particularly the one which was published in the May 27 issue of the NEWS. We are also aware of the McGraw-Hill viewpoint since the publisher of this paper was for many years connected with that company. He well remembers the turmoil created by safety device advertisements back in the days when the electrical industry was very sensitive about any mention of danger connected with electricity.

The publisher of the NEWS was Cleveland manager of *Electrical World* and *Electrical Merchandising* when the Square D Co. of Detroit shocked the industry with an advertisement which carried the headline "Jones Is Dead," and illustrated what happened to Jones because of his contact with an old fashioned knife switch.

After that hectic experience he succeeded in dissuading the manufacturer of Marshall's Lineman Protector Shields from carrying out his announced intention to run

a double-page spread in *Electrical World* showing a lineman's funeral with weeping relatives and all the trimmings. (Incidentally, we will serve notice right now that if anybody tries to drag a funeral across the pages of the NEWS, the answer will be "nothing doing.")

With all due respect to the wisdom and experience represented by the Curtis and the McGraw-Hill organizations, we cannot agree that their policies are applicable in toto to this paper.

A Reasonable Argument

Another argument has been presented, however, which we have given much thoughtful consideration. One advertising manager (and the most reasonable of the objectors encountered so far) states his views as follows:

"I believe you are definitely harming the electric refrigeration industry by accepting this type of advertising. I wish you would also believe that I view the electric refrigeration industry as being larger than any member or any group of members within the industry.

"I do not know what percentage of sales Grunow accounts for. Let us say 5 per cent for sake of argument. Does it seem right to you that the remaining 95 percent should be harmed by the other five? As a matter of fact, if you recognize this as stated in your editorial, you also recognize that Grunow itself may be harmed by this advertising.

"Please understand that I have no personal feeling against Grunow. However, when he does adopt policies which are distinctly detrimental to the industry as a whole and which are certain to result in loss of sales to all manufacturers, I do feel that you can do something other than to deplore in fact that a manufacturer will use advertising of this type.

"Your knowledge of the refrigeration industry is too great to prevent your knowing what excellent use the ice industry, for example, will make of this advertising. You know, as well as I do, that many representatives of the ice industry are carrying the clipped Grunow ad in their pockets today. Knowing this, I do not understand your attitude.

"Let us grant that it might be difficult to base a refusal on such grounds as 'untruthful' or 'unethical'. Certainly though, there is another reason why you can refuse it. I do not know just how to phrase this, but I assume that 'for the good of the industry' will do as well as any other.

"When I wrote you originally, I realized the difficulty of your position. I had read your editorial and the other comments in your paper. Originally I was a newspaper and trade paper man myself, and I think I can view this question from your side of the fence. However, with all this in mind I felt, and I still feel, that the good of the industry as a whole far outweighs any other elements and that this alone would justify you in refusing to accept such advertising.

"Your interests and the interests of all electric refrigerator manufacturers, including Grunow, are so greatly dependent on the public attitude toward refrigeration, that it hardly seems intelligent for us to stand aside wringing our hands while Grunow's advertising makes sales for competitive industries."

A Heavy Responsibility

Judging from the above and other discussions which have resulted from the Grunow advertisement and the editorial, it would appear that the NEWS has a very heavy responsibility in all matters pertaining to the welfare of the industry. We have been advised that it is the bounden duty of this paper to so function and comport itself that its great influence will at all times be "for the good of the industry."

We have been frequently reminded that this paper is avidly read by everybody in the industry, that susceptible dealers and impressionable salesmen believe what they read in the NEWS. We have also been told that information published in these columns reaches out and beyond the confines of the industry creating repercussions among bankers, brokers, investors, government officials, and even in the homes of the great American buying public.

We have had other occasions to consider these aspects of the problem but it has frequently been difficult to reconcile the views of individuals (who are especially sensitive to their competition) with the established policies of the paper. In the very nature of things some of these differences cannot be reconciled. It becomes necessary for the NEWS to operate in opposition to certain individual opinions in order to perform its proper function and maintain its position in the field.

Policy to Report Important News, Good or Bad

It has been our belief that all significant events in the industry should be reported in the NEWS. No doubt we have erred at times in failing to appreciate the importance of a particular activity. Likewise, we have probably given undue attention to unimportant events. The selection of news material and its arrangement for each issue of the paper is a matter of judgment which is, in turn, affected by a great many conditions which are beyond the immediate control of the editor.

Our natural tendency is to enthuse over new plans and programs which offer promise of being helpful to sound industry development. Needless to say, however, a great many activities are reported which are undoubtedly detrimental to industry progress. But if we had reported only the good news, constructive movements, the desirable activities, and if we had made it a practice to suppress the bad news and undesirable programs, the NEWS would never have become the outstanding industry publication which it is today.

A Warning in Advance

Even in the case of news which is obviously bad, we feel that it is the duty of the paper to report the facts accurately, just as a lookout on the bow of a ship should warn the helmsman of any sign of danger ahead.

We haven't had any thanks for it, but we submit the proposition that the NEWS has performed a constructive service to the industry in connection with the Grunow advertising. According to latest reports, the same style of copy may be used in consumer media. If that happens, then it must be admitted that the industry has been properly warned.

Furthermore, the controversy has brought out many of the arguments for and against such appeals to the public. Dealers and salesmen who may be confronted with the advertisement in the hands of prospects should be well prepared to meet the situation.

Letters

Lebrun Invented a Compressor—Not a Seal

Societe De La Garniture "Pacific"

29, Avenue Felix-Faure
Paris (15e), France

June 6, 1936.

Gentlemen:

We received your May 20 issue and noticed on page 20 two letters from the Societe B. Lebrun under the heading: B. Lebrun—Inventor of the Rotary Seal.

Except for some details of secondary importance, we agree with the content of these letters which we believe to be perfectly correct and in accordance with the truth.

However, we do protest strongly against the heading which you have chosen and which can cause an erroneous impression. The name "Rotary Seal" designates an original apparatus patented by the Rotary Seal Co., 809 W. Madison St., Chicago, for whom we are the European agents. The term "Rotary Seal" or "Rotating Seal" must be reserved for all apparatus which turns with the shaft.

It is quite true that B. Lebrun was the first builder, 50 years ago, of a simple alternating compressor of two cylinders, the two pistons being placed horizontally on both sides of a crankshaft, enclosed in a crankcase in a bath of oil under the pressure of the atmosphere. At the outlet of the crankcase, there is therefore on the turning shaft a water-tight packing under the pressure of the atmosphere. But this packing consisted of any kind of packing material and had nothing in common with what we call Rotary Seals.

Thus the title of your article should have mentioned: B. Lebrun—Inventor of single-acting compressor with suction line pressure in the crankcase (which implies necessarily a seal of any sort on the rotating shaft between gas in the crankcase and atmosphere; if the motor itself is not in the crankcase—hermetic type).

We believe moreover that it is of much greater importance for B. Lebrun to have invented the principle of the compressor. As to the rotary seal of the Rotary Seal Co., it is used consistently on all compressors built by the Societe B. Lebrun since 1932, when we brought to their attention this interesting improvement in the construction of compressors in a water-tight crankcase.

We hope that you will correct your error by giving greater justice to the great inventor B. Lebrun and by recognizing also the fame acquired by the rotary seals of the Rotary Seal Co.

L. C. A. LEONETTI,
Engineering Manager.

Doctors Want Data On Air Conditioning

American Medical Association
Council On Physical Therapy
535 N. Dearborn Street
Chicago, Illinois

June 12, 1936

Gentlemen:

Mr. Horgan of the *Chicago American* informs me that you may have a list of manufacturers of air-conditioning equipment. Occasionally this office receives inquiries concerning air conditioning devices and any information that you can give will be greatly appreciated.

Would you be willing to send a sample of your journal? If so, I would greatly appreciate your cooperation.

HOWARD A. CARTER, Secretary
Council on Physical Therapy

Answer: The above now has publications of this company. We suggest that manufacturers also send literature.

Errors in Ice-O-Matic Food Storage Data

Electrical Testing Laboratories
80th St. & East End Ave.
New York City, N. Y.

June 16, 1936.

Gentlemen:

Under date of May 8 we sent you our order No. 40201 covering the purchase of one Book of Specifications and one Service Manual. An examination of our records indicates that to date we have only received the Service Manual. Will you please advise at your convenience if the Book of Specifications has been mailed or if some delay has occurred in making the shipment.

Incidentally, in connection with refrigerator specifications we would like to call your attention to what is apparently an error in some of the figures covering the Ice-O-Matic refrigerators listed on page 14 of your April 22, 1936, issue. We recently had occasion to use some of this information in one of our reports and after the report was issued discovered that the figures for net food storage were incorrect. We have particular reference to the value given for the Model D-3641 refrigerator. In your table you list the net food storage space as 4.60 cu. ft. You will note that this checks with the figures given for the inside dimensions (26x19x16). In other words, the value of 4.6 represents the gross space and not the net food storage space, that is no allowance has been made for the evaporator. As a matter of interest, we are tabulating below the values given in the News together with those supplied by the manufacturer in some of their literature.

Model No.	Net Food Storage, Cu. Ft.	News Specifications	Manufacturer's Specifications
D-3641	4.60	4.20	
D-3651	5.80	5.30	
D-3662	6.92	6.40	
D-3682	8.40	7.80	
AP-12	12.5	12.5	
AP-15	15.6	15.6	
AP-19	19.2	19.2	

You will note that on the first four models the manufacturer's specification values differ from the ones given by you. In the last three models both specifications are in agreement. On the first four models the manufacturer is specifying net food storage. In the last three, he is inconsistent in that he is giving gross volume. In all of your figures the values reported

are gross food storage rather than net food storage space as indicated in your table.

We checked several other values on some of the other specifications listed in your April 22 issue and find that in all cases net food storage space is listed. It might be well, however, to make a more general survey of these values. There are, no doubt, other organizations besides our own who use the figures listed in reports and publications.

H. KOENIG,
Engineer.

Answer: Corrections will be made in the revised specifications to be published in the NEWS next week, July 1, also in the new Specifications book which is in the final stages of production.

Technical Information Needed in France

Societe Francaise des Thermostats
83, Rue d'Amsterdam
Paris, France

May 28, 1936.

We are enclosing certified check for \$7.50 and wish to take advantage of the combination rate to receive against this sum the: REFRIGERATION AND AIR CONDITIONING DIRECTORY, MASTER SERVICE MANUAL, and REFRIGERATION ENGINEERS MANUAL.

Could you also advise a commercial service and installation book for refrigeration, giving lay-outs of commercial installations, correct methods of setting controls, tables, etc.

We are specializing in automatic controls and we find that a considerable percentage of our customers in this country are eager to receive all kind of technical information which they cannot find printed in French.

We will be glad also to receive your recommendation for books dealing with repair and test shop work.

We shall much appreciate your advising us of the publication of any such books which we will be pleased to purchase.

G. N. GODEAU.

Answer: Editor Taubeneck reports from Paris that there would be a good market for the MASTER SERVICE MANUAL if translated into French. Can any reader refer us to a translator who is competent to handle this job?

Canadian School

British American Institutes
863 Bay St.
Toronto, Ontario, Canada

Editor:

Kindly enter our subscription for ELECTRIC REFRIGERATION NEWS for one year. Our cheque is attached.

For your information, one of our divisions—The British American Institute of Engineering is now conducting a course in Electric and Gas Refrigeration in which both home study and practical resident work are combined.

ROBERT C. POULTER

Plans Survey of Users In Denver Homes

O-K Appliance Corp.
1932 Broadway
Denver, Colo.

June 8, 1936

Gentlemen:

We are contemplating a survey of the better residential section of the city of Denver to ascertain the percentage of electric refrigerators in the different sections now in use.

In order to secure this information, without creating the impression of soliciting for sales, we would like to have a letter from a disinterested party as far as direct sales are concerned, asking us to make this survey.

Your cooperation would be very much appreciated and hope that you are willing to mail us such a letter which in the final analysis is for the good of the industry and figures accumulated will naturally be at your disposal.

Thanking you in advance for your assistance.

S. KUGLER.

Answer: We are anxious to encourage all efforts to secure factual data on refrigeration usage but we do not consider it advisable to sponsor surveys unless we have complete details regarding the plan.

Kelvinator Distributor Wants Parts Catalogs

Graybar Electric Co., Inc.
416 Ellamae St., Tampa, Fla.

June 2, 1936.

Gentlemen:

We will please thank you to have our name placed on your list to receive such information as is furnished by suppliers of refrigeration parts, etc. We understand that you have a list which is accessible to the manufacturers of parts and supplies for refrigeration.

We are Kelvinator's distributor and would be glad indeed to have this information from time to time. The writer has been a subscriber to ELECTRIC REFRIGERATION NEWS for a good number of years.

M. W. BAIRD.

Indianapolis Dealer Relates Growth of Replacement Market; Needs Standard Trade-in Values Established

By Phil B. Redeker, T. T. Quinn, and Winifred B. Hughes

Shaffer Cites Need for Book of Trade-In Prices

H. A. Shaffer, veteran refrigeration merchandiser who handles the well-to-do "north side" of Indianapolis for Frigidaire, thinks that it won't be long until the household side of the industry, like the automobile trade, needs a "blue book" to regulate prices on trade-ins.

"An awful lot of our sales this year have involved taking in used electric refrigerators," Mr. Shaffer said. "It's a new business for us, and there are no previous standards by which we can arrive at a price which we believe is fair both to us and the customer."

"Right now it's pretty much of a bidding and guesswork proposition. And, to be honest about it, it's not a money-making side of the business, either."

Bid Based on Worth of Unit

"We bid about what we think a used unit is worth—we're not trying to make anything on them. Most of the time, several other dealers are bidding on the same refrigerator—and then it usually narrows to who makes the best offer. The bids, we've found, will often vary considerably—indicating that other dealers are guessing on what they'll be able to get for the refrigerator, the same as we are."

Mr. Shaffer is quite interested in the replacement market, for one principal reason. His section of Indianapolis is just off the "millionaires' row" of the city, and most of the homeowners in that section have had electric refrigerators for years. In his immediate territory, the question is one of selling them new refrigerators to replace their present ones—they've been using electric refrigeration for years.

Oddly enough, Mr. Shaffer finds most of the replacement business comes from the middle-class homes rather than from those of the well-to-do. His explanation of this is:

Trading Small for Large

"Middle-class families, when they first bought refrigerators, naturally tended to look at the 'price' side of the picture—and many of them ended up by purchasing units too small for their needs. As their use of refrigeration went on, they began to realize their need for larger units; and now that some of them are in better financial shape, they are taking care of this need by trading in their old refrigerators for larger-size models."

"In the wealthier homes, price wasn't important in the initial purchase. So these homes, for the most part, bought larger units, with the result that their refrigeration has always been adequate for their needs—and they feel no need of replacement models."

This matter of disposing of replacement units interested us, and we asked Mr. Shaffer about it. Was getting rid of used models a problem of importance, we wanted to know. And who were the best buyers at present?

Bargain Hunting Market

"Buyers who are looking for bargains are one of the best markets for used refrigerators right now," he replied. "We can't afford to do much repairing on them, because the price they'd bring afterward wouldn't be worth the time and trouble we'd spend."

"But there are a lot of 'amateur mechanics' in town who like to putter around and fix their own refrigerators. Often they have a friend who doesn't mind helping them. These people can take a used job and fix it up so they can get a lot of good use from it."

"The best market, though, for used models is in the summer cabins and cottage camps which a lot of the families here keep up during the summer."

Break from Weather

"They want refrigeration, but they don't want to buy a new refrigerator to get it. Our better used models are right up their alley—they'll serve the purpose, and their initial cost isn't large."

"That's where most of our used models have gone this year."

Business during the last six weeks has been excellent, Mr. Shaffer said. "We finally got a break from the weather, and a lot of the sales which were hanging fire dropped right into our lap," he put it.

That, however, isn't the end of the story. Business is still good—so good, in fact, that the seven men in the sales department are going day and night, and the store simply can't get enough 7-cu. ft. models to meet its demands.

Mr. Shaffer has noted a gradual increase in the size preference which buyers show. Last year, he said, 6-cu.

ft. models were leaders—and they're still holding their own, for that matter. The surprising—and encouraging—thing this year has been the preponderance of favor for 7-cu. ft. models.

Better times, he thinks, explains the shift—plus the fact that people today want a refrigerator with ample capacity for their needs. They're buying for the future as well as for the immediate present.

Use the User for Prospects

The Shaffer organization, working as it does in the better section of the city, uses a rather novel shift in its sales work, too. Canvassing is out—or almost out—in favor of using the user.

"Canvassing is all right, in some sections," said Mr. Shaffer, "but in our case we figure it will only bother the housewife. Instead of welcoming the salesman as a friend, she will try to get rid of him as quickly as she can, so as to get on with her regular housework."

"You can imagine how a housewife, in one of the better homes, feels when a salesman walks on the porch and rings the doorbell about 9:30 in the morning. She's busy—and her one thought is how to get rid of him as quickly as she can. She's polite, of course—but she's just not interested. And that sets up a barrier which, more often than not, knocks out the sale."

"When one of her friends who owns a Frigidaire, however, calls her up and asks her to come over and see it, the whole thing is different. She welcomes the chance—and later, when the salesman calls, she welcomes him, too—because he has an introduction. And that, we feel, is a big step toward the order."

Meter Plans Helped Sale of Refrigerators in Dept. Stores

"1934 and '35 were our big selling years," declared F. M. Lawrence, manager of the electric refrigeration and appliance department of the electric refrigeration and appliance department of the W. M. Block Co. department store at 50 N. Illinois St.

"We were the first store in the city to sell refrigerators on meter-ator payment plans, and they increased our sales volume during those two years. Since other dealers have taken on meter selling plans, they are no longer as important a sales builder for us as they were."

Five Makes Are Sold

Five makes of electric refrigerators are carried in the department: Frigidaire, Kelvinator, General Electric, Apex, and Crosley. Offices and individual display rooms (one of which contains an all-electric kitchen) fringe the entire side and end of the department, which is stocked with complete lines of the five makes. Focusing attention on the merchandise, names of each of the lines, spelled out in foot-high, midnight blue letters, stand out against the cream wall background.

"We place greatest emphasis on our sales organization as the prime factor in increasing business volume," the manager stated. "We feel that without an adequate staff of good salesmen, we just have a lot of merchandise that can't sell itself."

Thirty men are employed in the appliance department, 12 of whom handle refrigeration and radios exclusively. Careful selection, endless training, and close supervision, characterize the policy behind the Block Co.'s refrigeration sales organization.

Short Sales Meetings

Short morning sales meetings (at which sometimes only a single point or problem is discussed), talks by manufacturers' representatives at weekly or bi-weekly meetings, and sending the men to the distributors' or factory training schools are part of the continual education program by which the department store keeps its refrigeration salesmen going full speed ahead.

Making each man feel that he is in business for himself keynotes the department's operating principles. "We try to impress the men with the idea that we are supplying the merchandise, paying the rent, and overhead expenses, and financing their sales, and they, like independent dealers, must build up individual clientele, and look constantly to increasing their profits," Mr. Lawrence said.

The salesmen are paid on a commission basis, with a regular minimum salary, which they receive as long as they are employed in the department. "Their salary is increased according to each month's earnings, and in addition to this, we pay all expenses which they have in connection with their outside contacting."

"We watch every man's work very

closely, and concentrate special attention on the ones whose sales are below par. The men are divided into divisions, and each division has its own supervisor," Mr. Lawrence explained.

Books for Prospect Records

Replacing the usual carded prospect file system, and providing a method of keeping a constant check on the men's daily work, the department store refrigeration section uses monthly books in which each man records his entire selling activities.

Pamphlet size, paper-covered books are used, two pages of which (dated for each working day) are supplied for the day's record. Page headings cover the following topics: name and address of the prospect, date of the first contact, where it was made, if he has a refrigerator, owns an ice box, or is in the market for any other appliance.

"The men organize their outside work so that they cover different sections of the city at set times during the month. When a home call is necessary, the salesman tries to arrange the appointment for a time at which he is charted to work in the neighborhood where the prospect lives."

"Then he notes the appointment on the sheet for the day named, and when the time comes, has his canvassing program all set up. This prevents the men from forgetting to make follow-up calls on prospects who say 'come back around the first of the month,'" the manager said.

"We check up on the books each day, and can see at a glance just what each one of our men is doing. The books are invaluable reference sources to us, and we have found the system far superior to that of carding prospect names, because in that method, cards are too easily lost, and the file can be 'padded' too easily."

The Block Co.'s refrigeration salesmen do little cold canvassing, but

consistently follow-up on prospect leads, many of which are obtained through "users," the manager said. Consistent, systematized effort is, in his opinion, the only formula for getting results.

Ice-Card Prospects

"When sales are slackening off, however," the manager stated, "our men do use the ice-card-prospecting method. They drive around and note the addresses of houses where ice cards are in the window, and then telephone the housewife, and try to interest her in electric refrigeration."

Recipe books are given to new "users" on contact calls made by the salesmen soon after the box has been installed, Mr. Lawrence stated. Full-page newspaper advertisements run in the city's two leading papers, are also used to increase floor traffic, as is advertising copy on refrigeration, included in the *Store News*, a monthly bulletin, issued to the Block Co.'s patrons.

Because so many sales are closed when the husband and wife can come together to see the appliance, the 8-hour working day is among the chief disadvantages in the merchandising set-up of the department store electrical appliance department, according to Mr. Lawrence.

To overcome this difficulty, a residential building, owned by the Block Co., located on Illinois St., about five blocks from the store, has been turned into a warehouse showroom.

"I conceived the idea of having a display room there, which we could keep open evenings. The front part of the house was remodeled, and now, in addition to being our warehouse, the house provides us with an ideal display set up, to which the salesmen can bring their prospects for evening demonstrations."

"Some of our men are there all the time. Their working schedules are

rotated so that each of them spends an equal amount of time on floor duty here, on duty at the display room, and in their contacting work."

Disposal of Used Models

All used boxes, taken in by the department on new refrigerator sales, are stocked at the branch display office, and liners advertising them are run in the company's copy insertions, Mr. Lawrence stated.

While it is not directly connected with any of the store's merchandising sections, the Better Homes Service department, of which Mrs. J. R. Farrell is director, has proven important in attracting patrons into the Wm. Block Co. store, and particularly into its home appliance section, Mr. Lawrence stated.

Established over two years ago, the department includes a recently constructed auditorium with a seating capacity for 800 persons. Entire front of the strikingly decorated, air conditioned auditorium forms the setting for an all-electric planned kitchen, which, done on the most extensive scale possible, is beautifully planned, equipped, and arranged. Sapphire blue, cream, and chrome trimmings form the tri-color decorative scheme.

From this model kitchen stage, Mrs. Farrell conducts weekly cooking schools for the store's patrons. Average attendance runs between 500 and 600 housewives. Mrs. Farrell also broadcasts weekly half-hour radio programs, called the "Kitchen of the Air," over Station WTBM, from the kitchen.

Sororities, church organizations, and women's groups and clubs hold luncheons and bridge parties in the auditorium. The department also conducts a meal planning and recipe service, and assists the store customers who seek its help in purchasing any type of household equipment.

(Concluded on Page 14, Column 1)

Service Dealers!

GENUINE FRIGIDAIRE

Precision-Built **PARTS**

...NOW AVAILABLE AT NEW LOW PRICES!



● Give your customers finer service and greater satisfaction—with Genuine Frigidaire Precision-Built Parts. Everything you need for installation and service work now available at new low prices. All supplies and parts meet the same high standards of quality and rigid

inspection as those used in new assembled equipment. Orders immediately filled through 49 distributing points in all parts of the United States. There is an Authorized Frigidaire Distributor near you. See him at once for catalog and prices, or mail the coupon.

Write Today
FOR CATALOG

FRIGIDAIRE CORPORATION, Dept. ERN-64, Dayton, Ohio

Please send me catalog and new low prices on Genuine Frigidaire Precision-Built Parts.

Name
Address
City State

Crosley May Sales Double Business of Keifert-Stewart Co.

(Concluded from Page 13, Column 5)

The 150 Crosley dealers who form the selling organization of the Keifert-Stewart Co., Crosley distributor at 1414 Georgia Ave., sold enough units during May to "double the company's business," according to O. C. Maurer, manager of Keifert-Stewart's refrigeration activities.

"Our dealers are looking ahead to a good June business also," Mr. Maurer stated. "Approximately 20 million dollars in bonus money will be paid to veterans in Marion County alone, and Crosley dealers here expect to pocket some of this in refrigeration sales," he added.

Personality.—In Mr. Maurer's opinion—the prime factor in building outstanding sales records. "By that I don't mean high pressure selling, but the dealer's originality in fixing up his store displays, his knowledge of his product, ways to put it over, and of the general business conditions in the town."

Cooperative Advertising Program

The distributorship has a cooperative program in which it pays 50% of dealer advertising costs. Three wholesale men work through the dealer territory, supplying each merchant with new promotional material and selling ideas.

No special salesmen contests are run by the Keifert-Stewart Co. because, according to Mr. Maurer, "there is some kind of a factory contest running all the time. But that doesn't deaden the value of the contests," he added. "One of our dealers here called up this morning and wanted us to come over and give his salesmen prizes which they earned in a current contest."

Keifert-Stewart Co. takes care of the delivery and servicing of refrigerators for its 11 dealers in Indianapolis. Four service men are employed by the company. It maintains no retail store. "That would be the last thing which we'd do, because it would cut into the dealer business here," he explained.

Three Dealer Meetings a Year

The firm holds three big dealer meetings each year in connection with new refrigeration and radio line showings, and presentations of new merchandising plans. Occasional dinner meetings are also held for the Indianapolis dealers.

"People are becoming more discriminating in buying electrical merchandise," Mr. Maurer said. "Where before their chief interest was in replacing ice boxes with electric refrigeration, now the convenience features of the unit come in for first consideration when they buy."

Tie-in arrangements with cooking schools sponsored by the metropolitan newspapers are among the cooperative promotions sponsored by the store.

Gibson Co. Awaits Delivery Of 11 Carloads of Norges

What kind of a selling job the dealers who get their Norge products from the Gibson Co., distributor at 433 W. Capital St. are doing is indicated in the assertion of E. M. Steves, manager of the company's specialty division, that "11 carloads of Norge refrigera-

tors have been ordered to be shipped to us on Monday morning."

Covering northern and central Indiana, the distributor has 175 dealers operating under it, 18 of which are in the Indianapolis sales territory.

In Mr. Steves' opinion, dramatized skits are far more effective in putting across sales points, at dealer and salesmen meetings, than are straight sales presentation talks.

Writes Play for Dealers

A series of nine meetings, held in strategic points throughout the company's territory, were recently conducted under Mr. Steves' supervision.

"I wrote a short play which our territory salesmen enacted at the dealer meetings," Mr. Steves explained. "Theme of the skit contrasted outdated inefficient merchandising methods, with 1936 selling ideas, and had a humorous strain designed to put it across."

"The meetings were held at key towns in our territory, and dealers and their salesmen from nearby districts were invited to attend. We had between 45 and 75 at each meeting."

"Following group meetings of this kind, the dealers usually go around and visit the Norge dealers' stores in the vicinity. They like this idea, because it not only gives the men a chance to pick up pointers on stock arrangement and display material, from each other, but it also establishes a feeling of pride in the dealer whose store is visited," the specialty division manager affirmed.

Two yearly meetings, to which the entire dealer organization is invited, are held by the Gibson Co. "We had about 400 at the last meeting which we held," Mr. Steves stated.

Off-Season Contests

Best time for running special salesmen contests, Mr. Steves believes, is not during the regular selling season, but when things are slowing down. "The men will work anyway in the spring when they know that the business is there, and its to their advantage to get it. But the time they need additional jacking up, in the form of contests, is in dull seasons, when they are likely to think: 'Nobody's buying now anyway.'"

Sponsoring a series of 18 weekly 1-minute spot radio announcements, in which the visit-your-nearest-Norge-dealer theme is used, over WFBM, a 5000 watt station here, is the company's current promotion. "Our dealers are going to go after the bonus trade, so this is played up also in our radio advertising," Mr. Steves declared.

Newspaper Advertising

Full page newspaper advertising, tying in the dealers' names with that of Norge and the distributor, is also used to promote sales.

"We had a full page advertisement in the Indianapolis News racing supplement when the Speedway races were held here, Decoration Day," the manager stated.

The advertisement contained pictures of Borg-Warner officials at the Speedway racing track, and a picture of the Norge refrigerator given to the race winner, in addition to the grand prize, the \$30,000 cup. Large type copy carried the Gibson Co. name, and also a list of its Indianapolis dealers. The Gibson insertion was the only electric refrigeration advertisement in the racing supplement.

Checkup on Store Conditions

The Gibson Co. endeavors to keep in touch with exact conditions in each of its dealers' stores at all times, Mr. Steves stated. To do this, the company's seven territory representatives are required to submit survey report sheets, containing complete information on Norge stores in each town in their sales district.

Report forms have four main sections, each with a number of detailed questions as subdivisions. Lead topics covered are: store appearance (exterior, interior, cleanliness of store, arrangement of material, outside identification) promotional material (questions on dealers use of various manufacturer display material), advertising (same), and dealer organization (no. of salesmen, training, etc.)

Space is left opposite each question for the salesman's written comment.

"When answers are left off, or when they indicate that the dealer is neglecting some point, we send the territory man a written form calling his attention to the unsatisfactory condition, and requesting that he remedy it immediately," Mr. Steves explained.

Study Reports on Dealers

Weekly meetings, at which the territory men are first interviewed individually, and then meet in a group, are held at the Gibson Co.'s office each Saturday.

"I have their report blanks right before me when the men come in, and we go over them together. If a man's report shows that there is something wrong in the dealer's store, I find out why, and we try to figure out what can be done about it."

The Gibson Co. employs one home economist, Miss Agnes Reaser, whose work is to assist local Norge dealers in re-sale work. This includes going to the customer's home and explaining the care and operation of her new appliance. She also holds cookery schools in dealers' showrooms.

Kelvinator Distributor to Operate as Parts Jobber

State Distributing Co., Meridian at Eleventh St., Kelvinator household distributor for the Indianapolis territory, is organizing a wholesale refrigeration parts and supplies operation under the direction of J. A. Duffy, Jr.

The company has made arrangements with Borg-Warner Service Parts Co., Chicago, to furnish it with a line of refrigeration and air-conditioning parts, in addition to the regular Kelvinator factory parts it regularly carries in stock.

State Distributing Co. expects to get its business from independent service men and companies in the Indiana-Kentucky territory, and Mr. Duffy was interested in obtaining all details possible about the Catalog Mailing Service which the News has in preparation.

He had heard about it, he said, from a Borg-Warner representative. The company's first catalog on its new venture will be off the press shortly, and Mr. Duffy is interested in seeing that it gets to the trade as quickly as possible.

A good reliable list of active service men and companies, in his opinion, is worth its price, no matter what that may be.

"We paid about \$18 for a list of Indiana-Kentucky service men from another company," he said. "There were around 250 names on the list—and most of them had whiskers on 'em."

Potter Distributor Tells of Education Problem

"Our work is not one of selling, but of educating! I can tell you about our refrigerator, but you have to want it, to grasp out for it yourself, before any selling can be done." Such is the original premise, and the keynoting theme which backgrounds the salesmanship of C. H. Geiger, head of the C. H. Geiger Co., Potter electric refrigerator dealer at 38 W. Ohio St.

Operating as the only Potter sales organization in Indianapolis, the company's sales have been very good for the past three years, according to Mr. Geiger.

Although advertising has been the chief promotional method used by the Geiger Co. in the three years that it has handled the Potter line, the gray-haired dealer doesn't place a great deal of stock in its efficacy. "People only read advertisements when they are looking for a bargain," he claimed.

"We spent approximately \$1,900 on billboard signs alone, the first year we sold the box, and since then we've been running copy in the newspapers here," said Mr. Geiger. "But people won't buy an electric refrigerator just from reading about it, they have to come in, see it for themselves, and have its features explained to them."

"In our advertisement this week," he continued, "we announced that we'd give this picture (a still life oil painting) to one of our refrigerator purchasers. I've sold six boxes already (Thursday) and not one of the customers has even asked about the picture."

Fifteen models, some of which are Potter refrigerators, and the others Childares, also manufactured by Potter, were displayed on the dealer's floor. The firm employs five salesmen, and cold canvassing is one of their chief means of obtaining new prospect leads.

Frigidaire Distributor Can't Keep Models in Stock

"Household refrigeration business in the territory we cover has simply been going wild this spring," Manager Clark Wheeler of Refrigeration Equipment Corp., Frigidaire distributor, says.

"We can't get enough refrigerators, especially in the 5- and 6-cu. ft. models, to keep a stock on hand. The minute we get them, out they go. Most of the time, they are spoken for by several dealers several days in advance of the time they arrive."

The company has 133 dealers in its territory—133 old timers, too, for Mr. Wheeler says most of them have been with the organization for 10 years or more.

"You'll find weak dealerships, of course, in every territory," says Mr. Wheeler, "but our business this year has been so good that even the poorer ones are making a creditable showing."

"Most of our dealers have been with us for a number of years, and understand our selling methods. Another reason they've been with us so long is that we are always willing to go at least half-way with them in settling their problems."

Suppose a dealer has been in a sales slump of rather long duration, without

showing signs of coming out of it. Some distributors might cancel him out in a hurry and ask questions afterward, but not Refrigeration Equipment Corp. The procedure here is reversed.

Handling Lagging Dealers

First time the lagging dealer is approached, it's from the distributor's angle. The company checks on its own part in the affair first, and then goes to the dealer with the question: Have we fallen down on our part of the job? Is there something we should do and aren't doing, to help you sell more?

If there's no improvement, the second approach fixes some of the responsibility for the slump on the dealer himself. Then if nothing happens, the third—and final—approach is based on the assumption that the fault is definitely with the dealer. Should all three avenues fail to produce an improvement, cancellation of the dealer's franchise results.

This year, however, there's been little need of calling even the "weak link" dealers on any of the three counts, Mr. Wheeler says—business has been that good.

Indicative of the distributorship's moderate dealer policy is the fact that the retailers are not forced to load up with refrigerators to meet anticipated demands—they buy models when, as, and if they sell them.

Dealers Buy as They Sell

In the hooroar and hilarity which accompany some distributor-dealer spring meetings, retailers often sign up for refrigerators far and away in advance of normal sales expectancies. Not so with the dealers in this organization. They buy a complete line of units, for display purposes only—after that, they buy as they sell.

The distributor carries all the stock in a central warehouse at Indianapolis, and deliveries are made to all parts of the territory from that point. It's no problem to maintain an efficient delivery schedule, either, for "we can make deliveries to any town in our territory the morning after we get the order," Mr. Wheeler says.

If the distance is short, and the need urgent, deliveries may be made even faster than that.

With dealers spared the expense of keeping a reserve stock of models on hand, their cooperation, as might be expected, is naturally pretty good.

Mr. Wheeler was tipped off to the business that was ahead this spring, he says, when the dealer meetings were held early in the season.

Policy on Floor Models

"We don't compel our dealers to keep every model on their floors," he said, "but we strongly advise them to, because they can never tell how many sales of larger units they miss by not having a model to show the prospect."

"A year or two ago some of the dealers didn't want to put in the larger models, for fear they'd have trouble moving them. This year, however, almost to a dealer they signed up to display the whole line. Apparently they were confident that this year would be a record-breaker. And that's just what it's been, so far, too."



CURTIS SCORES AGAIN

CURTIS pioneered the "V"-type Timken-roller-bearing equipped, pressure-lubricated refrigeration compressor which, at the time, was an innovation—now a generally adopted design.

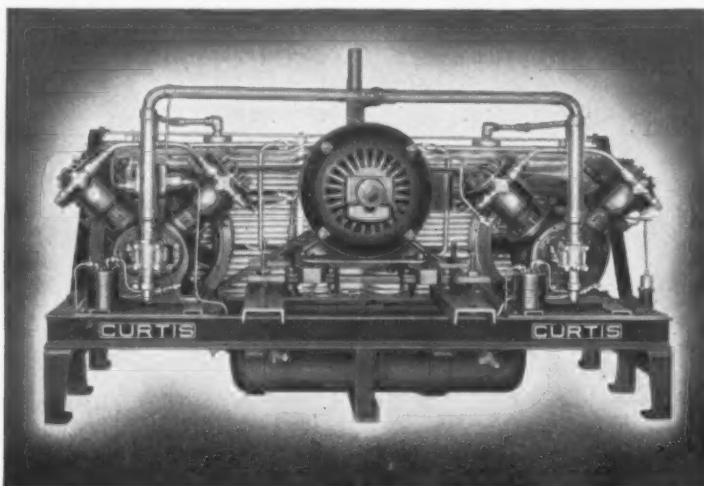
Now CURTIS pioneers with a compact 30 Ton Dual Unit incorporating two proven "V"-type compressors driven by one motor.

A complete line of units up to 30 Tons.

CURTIS

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Company
1912 Kienlen Avenue, St. Louis, Missouri

In Canada: Canadian Curtis Refrigeration Company, Ltd., 20 George Street, Hamilton, Ontario, Canada



Dual design permits automatic capacity control for variable air-conditioning loads.



Belt adjustment provided in all directions instead of usual vertical only.

WOLVERINE TUBING CUTS SERVICE COSTS

Service work due to tubing defects, dirt, porosity, roughness, or to moisture in dehydrated refrigeration tubing, is today entirely inexcusable. The manufacture of good refrigeration tubing has developed into an almost exact science with adequate checks and control to guarantee a definite standard of quality. Practically all refrigeration tubing is now marked with the manufacturer's name at intervals along its length. The name

determines whether you may rely on its quality or not—whether you may consider an installation completed when your men leave the job or not. Wolverine's leadership in this field is the result of many years of specializing and engineering development.

WOLVERINE TUBE CO.
SEAMLESS COPPER BRASS & ALUMINUM

1411 Central Ave.



Detroit, Mich.

H. M. ROBINS CO., Export Factor

Setup for Central Department to Handle Service Work of Appliances Sold by Dept. Stores Explained by Richert

CHICAGO—The problem of servicing the many and varied mechanical and electrical appliances carried by the department store may best be met by a centralized service department, Edward J. Richert, workroom superintendent of J. L. Hudson Co., Detroit, told a session of the store management group of National Retail Drygoods Association during the mid-year joint conference here recently.

"In the larger store this idea can be carried out very effectively by a separately organized service department, which in the smaller store, with perhaps a more unequal volume among the separate appliance items, the same results may be obtained by a combination perhaps of the store maintenance division and the customer service section," Mr. Richert said.

Advantages of System

"The average mechanical and electrical maintenance man has sufficient basic background to acquire proficiency in the smaller appliance line, and customer contact is only a matter of proper training.

"The general advantages of a separately organized centralized service department are many—among the most important being:

"1. A definite saving in personnel, made possible by the training of service men to handle efficiently more than one certain type of mechanical or electrical repair.

"2. An organization of this kind eliminates duplication, in that it is seldom necessary to cover a given area with more than one man the same day, to handle service calls from separate departments.

"3. It makes possible more thorough concentration of working territory, reducing the non-productive or driving time of outside service men much more than is possible with each department handling its own service calls.

"4. It brings about a definite reduction of supervisory personnel, and relieves selling or buying management of responsibility, with which it should not be burdened.

INFORMAL TALK NUMBER 55

They Learn How You Want It Done Then They Do It In Our Shops

When you employ an R-A-C-I Trained man for installation and service work, you get a fellow who has spent over 600 hours learning what you want done and how to do it. After he satisfied us that he knew what it was all about, we paid his fare to Chicago. Then we gave him 100 hours of practical experience on actual apparatus under competent instructors.

The result is, you get a man with experience, thoroughly trained for profitable service, under the supervision of industry-appointed engineers—a man whose training has been endorsed by thirty leading manufacturers—a fellow you can bank and build on.

Write for details. No obligation.

THE REFRIGERATION AND AIR CONDITIONING INSTITUTE

2150 LAWRENCE AVE. • CHICAGO



The Officially Endorsed School

"5. Clerical personnel is reduced to a minimum with centralization.

"6. A definite saving of valuable space is affected.

"7. A much better control of labor turnover is possible with a properly trained central repair staff.

"8. Factory returns of appliances, always a source of annoyance and delayed service to customer, are speeded up considerably through the central control made possible by handling all such transactions through a single department. Reduction of the number of those returns is also made possible through central supervision, and the proper shop facilities, with adequate and modern equipment.

"9. It provides an outlet for 'trade-in' merchandise, making it possible to salvage a considerable amount annually from this source.

"10. And finally, but perhaps most important from a customer standpoint, a much better and faster service is possible through being able to quickly direct service requests to a centralized department, rather than to anyone of a dozen or more separate departments throughout the store."

Factors Determining Location

"In planning the establishment of a centralized repair service for mechanical and electrical appliances, careful consideration should be given the matter of location, Mr. Richert said.

"1. Parking facilities should be readily accessible to service men in the immediate vicinity.

"2. Convenient entrance and exit from street to service shop should be available for men with parts and supplies.

"3. The department should be located as near as possible to major stock sections of parent selling departments, as a close working arrangement with these departments is preferable and sometimes necessary through the need of immediate replacement of factory defective parts."

Located in Warehouse

Hudson's central appliance service shop, or Customer's Service Department, Mr. Richert said, is located in the warehouse, conveniently adjacent to reserve stock, such as radios, refrigerators, stoves, toys, lighting fixtures, washing machines, ironers, and sewing machines. Ample parking facilities are available directly across the street.

The department has a total personnel of 33, consisting of a department manager, a man well versed in all lines of appliance work; five clerks; five inside shopmen on radios and appliances; one pick-up or messenger boy; and 20 service men, many of them interchangeable on various types of appliance service.

Accounting Methods

Credit for service rendered to parent selling departments or gratis service to customers is obtained by turning in to the statistical department copies of authorized work orders, with itemized labor and parts charges. Direct charges are made on "Customer Pay" transactions.

Labor for service in the customer's home is charged for at the rate of \$2.50 per hour for the first hour, and \$1.50 per hour thereafter (while in customer's home), with a minimum charge of \$1 for any call, with the exception of radio service calls, which are charged for at the straight rate of \$1.50 per call.

Shop labor is charged at the rate of \$1.50 per hour and \$1 per hour for departmental work.

"The total sales and service credit of the department for the year 1935 amounted to \$100,192," Mr. Richert concluded.

Questions

Fountain Equipment

No. 2816 (Manufacturer, England)—"Can you put us in touch with makers of milk pumps and syrup pumps and jars, for use with milk bars and soda fountains."

Answer: Write to: Bastian Blessing Co., 240 E. Ontario St., Chicago, Ill. Liquid Carbonic Corp., 3100 S. Kedzie Ave., Chicago, Ill. Russ Soda Fountain Co., 5700 Walworth Ave., Cleveland, Ohio

Data on Absorption Units

No. 2817 (Reader, Florida)—"Please advise where I can obtain detailed information—some treatise or book or pamphlet—on the subject of domestic refrigeration by use of flame under the generator and greatly oblige."

Answer: An article describing the operation of the Electrolux air-cooled refrigerator was published in the March 29, 1933, issue of ELECTRIC REFRIGERATION NEWS. Back issues of the NEWS are obtainable at a cost of 10 cents per copy.

Westinghouse Parts

No. 2818 (Dealer, West Virginia)—"Please advise us where we can purchase trays, grids, and shelves to fit the new style Westinghouse refrigerator units. We have been unable to get our supply from our own distributor and thought you could advise us of some distributor or manufacturer where we can get these trays."

Answer: Write to Westinghouse Electric & Mfg. Co., Mansfield, Ohio.

Sales of Manufacturers

No. 2819 (Manufacturer, Michigan)—"Will you please furnish us with some up-to-date statistics regarding refrigerator sales by the four leading manufacturers? We would like to know how the present sales for 1936 for the first six months of this year, compare with those of last year in the Detroit metropolitan area."

Answer: We cannot furnish figures on refrigerator sales by individual manufacturers, as the manufacturers do not make these figures public.

Monthly reports of sales of refrigerators by member companies of the National Electrical Manufacturers Association (Nema) are reported in ELECTRIC REFRIGERATION NEWS as soon as they are released. Nema refrigerator sales by states are also reported in the NEWS each month.

Ice Selling Methods

No. 2820 (Manufacturer, Ohio)—"The National Association of Ice Manufacturers, and local ice associations have been conducting campaigns in connection with ice refrigeration, and particularly in connection with an ice box which they call a Coolerator."

"We have found that in one place these Coolerators are sold under terms whereby the ice company agrees to keep the box refrigerated."

"We are interested in obtaining complete data as to the activities of the ice companies in this connection, and are wondering if you are in position to help us, either by furnishing us with information desired, or by directing us as to just where it can be obtained."

Answer: Write to the Ice Refrigeration Bureau, 1344 Book Bldg., Detroit, Mich.

Pipe Covering

No. 2821 (Distributor, Pennsylvania)—"Will you advise if there is anything made to cover 1/2-in. ice water pipes that is cheaper than the cork insulation, the price of which is too high for low price installations."

Answer: Write to: American Hair & Felt Co., 22 N. Bank Drive, Chicago, Ill. The Luse Stevenson Co., 228 N. La Salle St., Chicago, Ill. The Union Fiber Co., Inc., Winona, Minn.

Total Refrigerator Sales

No. 2822 (Reader, Rhode Island)—"Will you please tell me how many electric refrigerators were sold in the United States since electric refrigerators were made."

Answer: We estimate that a total of approximately 8,400,000 household electric refrigerators have been sold in the United States up to Jan. 1, 1936.

Duration of Tests

No. 2823 (Dealer, Oregon)—"Enclosed please find 10 cents for the March 25, 1936, issue of the NEWS. This I believe is the issue giving the results of the test run at the University of Wisconsin."

"Do you happen to know the period of time that was consumed in making these tests?"

Answer: The period of time consumed in making the various tests on the refrigerators tested in the Electrical Standards Laboratory of the University of Wisconsin is contained in the report published in the March 25 issue.

Puffer-Hubbard Cases

No. 2824 (Dealer, Massachusetts)—"Could you furnish me the name and address of the manufacturers of the Puffer-Hubbard refrigerated cases? Incidentally, I am anxious to get a list of all manufacturers of electric refrigerators for domestic and commercial uses. A list of manufacturers of refrigerated show cases and a list of manufacturers of air-conditioning equipment. If there is a directory of such manufacturers published, please advise me where I may obtain it."

Answer: Puffer-Hubbard refrigerated cases are manufactured by the Puffer-Hubbard Mfg. Co., 2601 32nd Ave., South, Minneapolis, Minn.

The 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY lists all manufacturers of refrigeration and air-conditioning equipment.

Oil Separators

No. 2825 (Dealer, Iowa)—"We are regular subscribers of your weekly paper and have your service manual, but are unable to find any reference or list of names of manufacturers of oil separators with automatic oil returns."

Answer: Manufacturers of oil separators are listed on page 274 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Hydrator Covers

No. 2826 (Manufacturer, Illinois)—"Would you please give us the names of manufacturers who make molded rubber covers for hydrators."

Answer: We suggest that you contact the following companies:

American Hard Rubber Co., 11 Mercer St., New York, N. Y. Miller Rubber Products Co., S. High St., Akron, Ohio

Norge Price Increase?

No. 2827 (Dealer, North Carolina)—"I would appreciate it very much if you will advise me if there has been any price increase in the Norge refrigerator since the prices were first announced of the 1936 line. I sell a competitive line and would like to have this information if ethical."

Answer: Since the Norge company does not establish list prices, we cannot tell you whether or not there have been any price changes in 1936 models.

Standard Stove Names New Distributors In 13 Cities

TOLEDO—Standard Electric Stove Co. recently announced appointment of the following new distributors: Frank M. Brown Co., Portland, Me.; Providence Electric Co., Providence, R. I.; Massachusetts Gas & Electric Light Supply Co., Boston; Mayflower Lamp & Sales Co., St. Louis; The Frankelite Co., Cleveland; Esco Electric Supply Co., Albany, N. Y.; Standard Electric Supply Co., Milwaukee.

W. A. Roosevelt Co., La Crosse, Wis.; Appliance Distributing Co., Columbus, Ohio; Western Metal Supply Co., San Diego, Calif.; The Olmsted Co., Syracuse, N. Y.; Federal Oil Burner Corp., Newark, N. J.; and O. S. Stapley & Co., Phoenix, Ariz.

In addition, Morley Bros. Co., with offices in Saginaw, Detroit, and Grand Rapids, Mich., was assigned all of southern Michigan except the counties bordering Ohio and Indiana.

TEMPRITE
INSTANTANEOUS
BEER and WATER COOLERS
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VIRGINIA SMELTING
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KRACK
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For Every Phase of
Commercial Refrigeration
and Air Conditioning
REFRIGERATION APPLIANCES, INC.
1342 West Lake Street, Chicago

1748 COIL LISTINGS
for
WALK-IN COOLERS
in catalog No. 336

Shallow Fins, High Fins, Wide Coils, Narrow Coils, Short ones or long, many tubes, few tubes—in short, a coil to suit any specific requirement. All copper—fused bond solid fins—electro tin finish.

TRENTON AUTO RADIATOR WORKS
210 West 65th, N.Y.C. TRENTON, N. J. 5114 Liberty Ave., Pittsburgh, Pa.

UNIVERSAL COOLER uses
SYLPHON BELLOWS
for Crankshaft Seals



To seal the crankshaft against oil, refrigerant and air leakage—problem of major importance in condensing unit design—the Universal Cooler Corporation turned to the Syphon Bellows.

Illustrated above is the application of this bellows which maintains tight contact with minimum friction and uniform bearing tension.

The remarkable durability of this seamless, jointless, metal diaphragm has contributed much toward the reliability of modern mechanical refrigeration by offering superior protection at many vital points—by replacing packing in valves and stuffing boxes, by offering a simple, highly sensitive, powerful, long-lived thermostat element for both electric switch and expansion valve operation.

Avail yourself of the 35 years of experience of Fulton Syphon engineers in the development and correct application of this unique machine part, used by the leaders in the refrigeration industry. Ask for Bulletin MO-121.

FULTON SYLPHON Co.
KNOXVILLE, TENN., U.S.A.
Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

EVAPO CONDENSER ASSURES BIG MONEY!

New Profit Item, with Ready Market
Compact—Complete—Easy to Install
FOR USE WITH ALL MECHANICAL REFRIGERATION UNITS

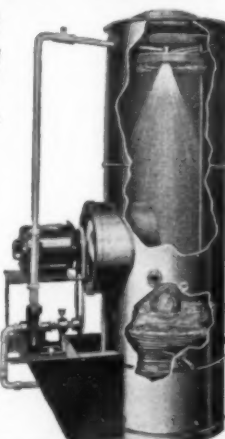
A combined water tower and highly efficient condenser.

LOW ORIGINAL COST... ECONOMICAL IN OPERATION

Completely pays for itself in a short period by savings in water and power consumption.

DEALERS NOTICE—Write for complete information and dealer's set-up.

THE BRUS COMPANY
215 EAST 20th ST. KANSAS CITY, MO.



The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.

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If you are engaged in the business of servicing or selling refrigeration you should have a copy of our new 96 page SUMMER catalog. Write today on your letterhead. We sell to the trade only.

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for REFRIGERATION
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EVERYTHING YOU NEED FROM ONE SOURCE
No matter what parts, supplies or tools you may need for any type of refrigerator or air conditioner, our COMPLETE LINE can meet your requirements promptly. And it's all QUALITY MERCHANDISE. When you deal with Airo you know you can absolutely rely on getting exactly what you order. Airo prices are the very lowest rock-bottom wholesale prices obtainable. You get the benefit of our large volume and careful buying. Orders are shipped the same day received. WRITE FOR NEW, COMPLETE CATALOG. It's FREE.

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CHANGE-OVER**

FOR 10 HOURS OF
Frigidair Compressors

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1111 N. Dearborn Street
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featuring the

HASCO CHANGE-OVER

Complete modernization for old compressors. The Change-Over gives new design, new appearance, new economy. Easy to install—no holes to drill—no metal to cut. Sold exclusively by HASCO. Get the details from this new catalog—send for your copy today.

We also stock a complete line of Ultra Precision Parts, backed by the HASCO guarantee of mechanical perfection.

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Refrigeration Instruments by Marsh

MARSH REFRIGERATION GAUGES are available in all types and for all applications including sulphur dioxide, methyl chloride, Freon, carbon dioxide, ammonia, etc.

These instruments are ruggedly built and are particularly adaptable for service in the factory, testing laboratory or out in the field.

When so ordered Marsh refrigeration gauges can be supplied with zero adjustment feature (patent pending) assuring perfect accuracy at every reading of the instrument.



Jas. P. Marsh Corporation
2067 SOUTHPORT AVE., CHICAGO, ILL.

44 Sales Are Made in Ardmore 'Round-up'

ARDMORE, Okla. — Refrigeration dealers here under the leadership of Sam Stephens, Crosley dealer, recently staged an "Electric Refrigeration Round-Up"—with 44 sales and a large prospect list as the result.

Merchandise prizes totaling \$250 were given to adults who personally called at the stores of the nine local electric refrigerator dealers during the week.

Local newspapers and radio stations cooperated and movie theaters gave free tickets for the prize drawing night.

Mr. Stephens reports that approximately 75% of the many hundreds that called at the store during the week were not owners of electric refrigerators.

Patents

Issued May 26, 1936

2,041,725. ART OF REFRIGERATION. Walter J. Podbielniak, Chicago, Ill. Application July 14, 1934, Serial No. 735,096. 17 Claims. (Cl. 62-170.)

2,041,870. AIR CONDITIONING EQUIPMENT. Raymond A. Sheffield, Boston, Mass. Application June 23, 1932, Serial No. 618,892. 23 Claims. (Cl. 257-9.)

2,041,959. AIR CONDITIONER. Frederick Riebel, Jr., and Lachlan W. Child, Toledo, Ohio, assignors, by mesne assignments, to Aeriet Air Conditioner Co. Application July 14, 1933, Serial No. 680,439. 11 Claims. (Cl. 261-115.)

2,041,970. COMPRESSOR VALVE AND CAGE. Milton S. Shepherd, Salt Lake City, Utah, assignor of forty per cent to Louis A. Roser, Salt Lake City, Utah. Application Dec. 12, 1934, Serial No. 757,099. 2 Claims. (Cl. 251-144.)

2,042,083. DRIVING MECHANISM FOR ENGINES, COMPRESSORS, PUMPS, AND OTHER MACHINES. Richard Edward Watts, Stamford, England. Application Nov. 12, 1934, Serial No. 752,793. In Great Britain, Nov. 16, 1933. 14 Claims. (Cl. 74-50.)

2,042,087. REFRIGERANT CONDENSING APPARATUS. Sheridan Joseph Best, Dallas, Tex., assignor of three-fifteenths to Thomas T. Lewis, two fifteenths to Joseph J. Eckford, and one-fifteenth to Paul T. McMahon, all of Dallas, Tex. Application Aug. 7, 1935, Serial No. 35,211. 9 Claims. (Cl. 257-37.)

2,042,108. MILK STIRRING AND COOLING DEVICE. Edmund Harry Kuehne, Burlington, Wis. Application March 26, 1935, Serial No. 13,133. 1 Claim. (Cl. 259-71.)

2,042,141. AIR CONDITIONING APPARATUS. Given Campbell, St. Louis, Mo. Application Dec. 31, 1934, Serial No. 759,808. 11 Claims. (Cl. 257-244.)

2,042,142. AIR CONDITIONING APPARATUS. Given Campbell, St. Louis, Mo. Application Sept. 9, 1935, Serial No. 39,722. 16 Claims. (Cl. 257-244.)

2,042,185. HUMIDIFYING APPARATUS. Bruno Michalski, Paramus, N. Y., assignor of one-half to Robert W. Beardslee, Scarsdale, N. Y. Application May 15, 1935, Serial No. 21,532. 5 Claims. (Cl. 237-78.)

2,042,289. AIR HUMIDIFIER AND CLEANER. Hornsby Sewell Baldwin, Perth Amboy, N. J. Application June 26, 1935, Serial No. 28,551. 1 Claim. (Cl. 183-8.)

2,042,355. REFRIGERATING SYSTEM. Carl Georg Munter, Stockholm, Sweden, assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application July 23, 1932, Serial No. 624,223. In Germany Aug. 1, 1931. 12 Claims. (Cl. 62-178.)

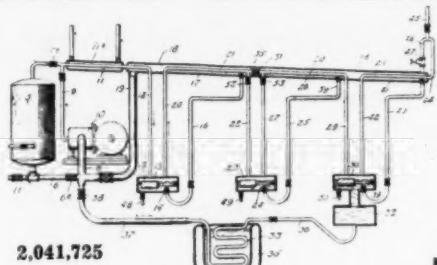
2,042,373. REFRIGERATOR. Erik Wenander, Motala, Sweden, assignor, by mesne assignments, to Servel, Inc., Dover, Del. Application May 10, 1932, Serial No. 610,363. In Germany July 24, 1931. 13 Claims. (Cl. 62-119.5.)

2,042,384. CONSTANT TEMPERATURE REFRIGERATOR. Lloyd C. Bird, Hampton M. Rexrode, and Ralph R. Chappell, Richmond, Va., assignors to Phipps & Bird, Inc., Richmond, Va. Application Aug. 15, 1935, Serial No. 36,398. 4 Claims. (Cl. 257-3.)

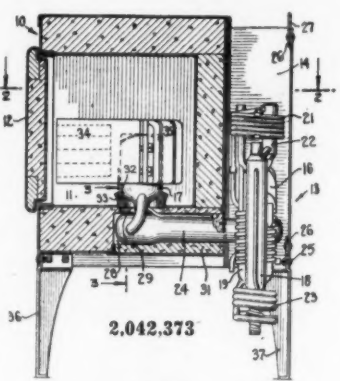
2,042,394. ART OF PURGING AND RECTIFYING OIL IN REFRIGERATOR SYSTEMS. Norman H. Gay, Los Angeles, Calif. Application Feb. 5, 1934, Serial No. 709,864. 20 Claims. (Cl. 62-115.)

2,042,418. REFRIGERATED BEVERAGE DISPENSING APPARATUS. Joseph Askin, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application March 29, 1933, Serial No. 663,397. 1 Claim. (Cl. 62-141.)

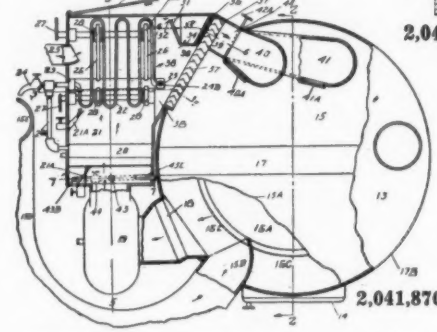
2,042,419. OIL RETURN DEVICE FOR FLOODED EVAPORATORS. Joseph Askin and Joseph D. Lear, Buffalo, N. Y., assignors to Fedders Mfg. Co., Inc., Buffalo, N. Y. Application Nov. 3, 1933, Serial No. 696,521. 7 Claims. (Cl. 62-126.)



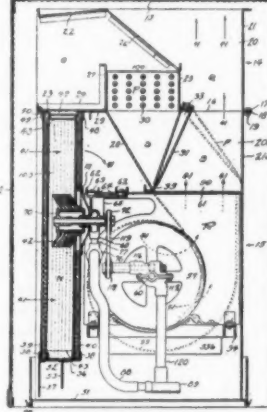
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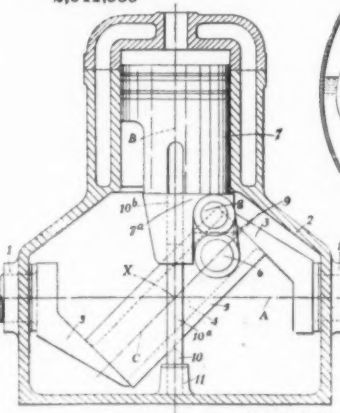
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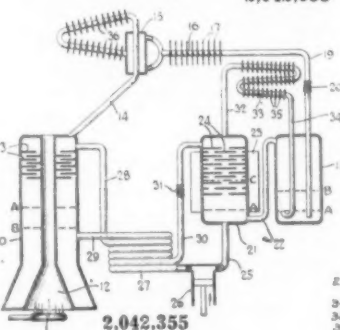
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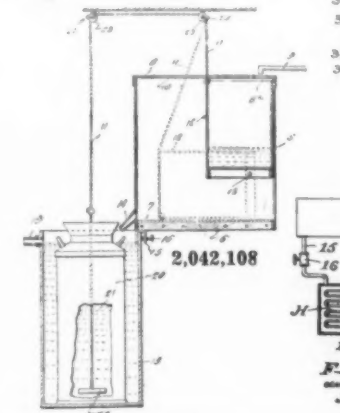
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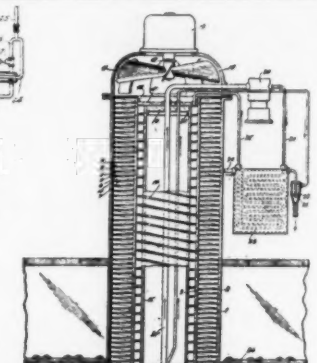
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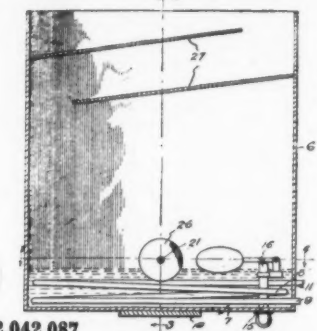
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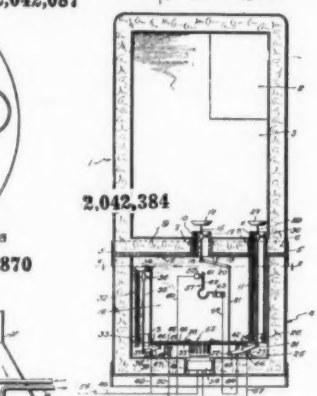
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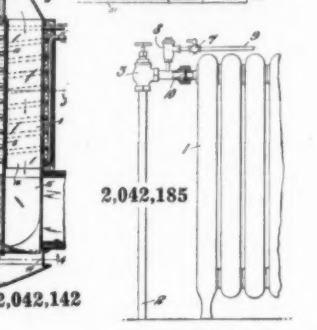
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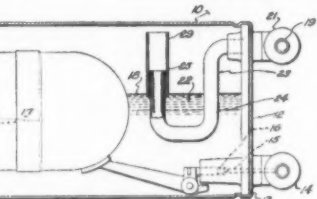
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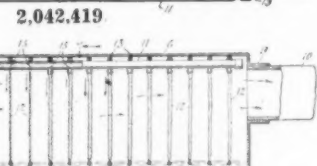
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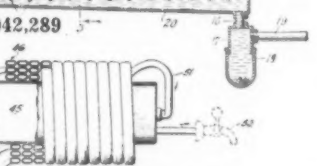
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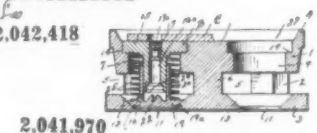
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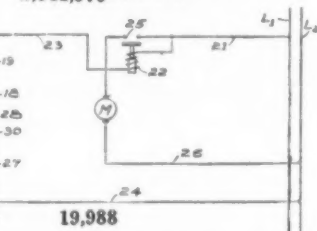
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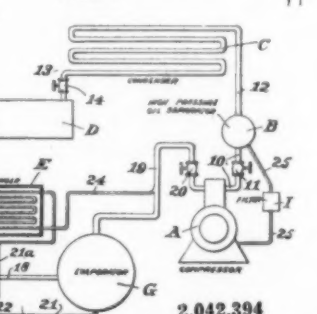
2,042,418



2,041,970



19,988



2,042,394

REISSUES

19,988. REFRIGERATING APPARATUS. William F. Swezey, Cleveland, Ohio, assignor to Westinghouse Electric & Mfg. Co. Original No. 1,825,291, dated Sept. 29, 1931, Serial No. 354,239, April 11, 1929. Application for reissue March 29, 1933, Serial No. 663,410. 14 Claims. (Cl. 62-4.)

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Classified

RATES: Fifty words or less, one insertion, \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

WANTED—DESIGN ENGINEER. Prominent manufacturer entering field seeks draftsman with experience in design of electric refrigeration controls. Consideration will only be given applicants who give definitely in first letter their experience in this field. State salary expected for this excellent opportunity. Replies held confidential. Box 806, Electric Refrigeration News.

POSITIONS WANTED

MANUFACTURER'S REPRESENTATIVE, well known in refrigeration, air conditioning and heating fields in Chicago territory, desires connection with manufacturer of products of merit which can be sold in above lines. Capable sales engineer whose past record assures aggressive, high calibre representation. Best of references as to ability and character available. Box 808, Electric Refrigeration News.

SALES MANAGER or representative for items sold on large contracts. Well acquainted with engineering, purchasing and production executives of nearly all manufacturers of mechanical and ice refrigerators in entire country. More than ten successful years in present position. Legitimate reason for wanting to change. Favor promotional work on new product of merit where acquaintance will be an asset. Not a cheap man but one who can get results. Single, so no objection to extensive traveling. Address Box 807, Electric Refrigeration News.

FRANCHISE AVAILABLE

MY HEALTH will not permit me to work 24 hours a day. Therefore, I must sell my Kelvinator commercial distributorship franchise. Service alone will better than pay all expenses. I have two service trucks, good stocks of parts and supplies, dandy service contracts and no indebtedness. Price is reasonable. Box 809, Electric Refrigeration News.

FRANCHISE WANTED

NEW REFRIGERATION supply business wants contact with manufacturers of expansion valves, dehydrators, gauges, etc. Communicate with ARCTIC REFRIGERATION SUPPLY COMPANY, 1212 Tremont Street, Roxbury, Massachusetts.

EQUIPMENT FOR SALE

DEALERS and servicemen. Used refrigerators "As Is." Recondition, spray them yourself, save money. Frigidaires \$19.00 up, Kelvinators \$15.00 up, Copeland, \$15.00 up, General Electric \$19.00 up. Electrolux, Gibsons, Majestics, Bohn, Servels, Ice-O-Matics, Graybars, Coldairs, Lectrics, Holmes, G & S 1/4 h.p. Frigidaire units. Others from 1/4 h.p. to 1 h.p. \$12.50 up. PILGRIM REFRIGERATION CO., 43-47 39th Place, Long Island City, N. Y.

STANDARD WATER cooled condensers new—repaired—exchanged. New replacements for Frigidaire Model N, \$19.00; for Model C, \$26.00. Model N Frigidaire condenser repaired or exchanged, \$10.00; Model C, \$15.00. Send for our new bulletin, just issued, illustrating Standard evapora-

tors, condensers, fin coils. **STANDARD REFRIGERATION PARTS COMPANY,** 5101 W. Madison St., Chicago, Ill.

FRIGIDAIRE MODEL G twin cylinder highside 1/4 h.p., \$24.50. Model S, \$19.50. Model A, \$29.50. Single cylinder \$15.00. Model N, 1/2 h.p., \$60.00. Model C, 1 h.p., \$90.00. Kelvinator single cylinder \$15.00. Twin cylinder, 1/4 h.p., \$30.00; 1/2 h.p., \$55.00; 3/4 h.p., \$65.00. Copeland 1/4 h.p. Model L, complete with motor and compressor in working order, \$4.75. **FEDERAL REFRIGERATOR CORPORATION,** 57 East 25th Street, New York City.

FRIGIDAIRE plain T two temperature valves \$2.50. Mercoind No. 848 controls complete with tube \$5.00. Try Warrenol for stuck-up compressors. Samples available. Thermostats, float valves, and expansion valves rebuilt. Prompt service. Same day shipment on refrigerant gases. **HALECTRIC LABORATORY,** 1793 Lakeview Road, Cleveland, Ohio.

MODERNIZE your old refrigerators with black modernistic 4-inch legs at only a dollar per set. Made to fit all makes of boxes. Send your list of surplus materials to us. **ESCOL JOBBING CO.,** 2323 E. 70th Place, Chicago, Ill.

REFRIGERATOR DEALERS! Make money with Federal's reconditioned refrigerators. 1000 refrigerators such as Frigidaire, G. E., Kelvinator, Electrolux, etc., completely remanufactured and rebuilt, some as is, as low as \$15; also hundreds of new refrigerators priced for promotional purposes. **FEDERAL REFRIGERATOR CORP.,** 57 East 25th St., New York.

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WANTED TO BUY—General Electric hermetic sealed units, household models preferred. **REX REFRIGERATION SERVICE, INC.,** 446-48 East 79th Street, Chicago.

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FIX MAJESTICS YOURSELF. Service men—get out of competition and get in the money; be first to know how to fix Majestics and General Electrics in your community. We give you step by step instructions on how to open these units and repair them. These instructions are told to you in service man's language so any service man can understand them. Majestic instructions \$10.00—General Electric instructions \$5.00. Remember if you don't learn how to fix sealed units, you will soon be eliminated. **PENO SERVICE COMPANY,** Ft. Smith, Ark.

MAJESTIC UNITS; any model, rebuilt or exchanged \$20.00 f.o.b. Chicago. Guarantee six months. All models in stock for prompt exchange. Wholesale only. **REFRIGERATION PRODUCTS, INC.,** 122 W. Illinois St., Chicago, Ill.

SAVE MONEY on electric motor repairs. We rebuild and rewind thousands of motors yearly for largest refrigeration firms in the East and can save you money on your motor problems. Write for our price schedule for rewinding or rebuilding motors for refrigeration, oil burners, washing machines, motor stokers, and air condition motors. Out of town motors are picked up and delivered by our motor transportation service. Write for our dealers' price list. **P. J. QUINN'S SONS, INC.,** 166 Vernon Ave., Long Island City, N. Y.

GENERAL ELECTRIC sealed units repaired, exchanged. Work guaranteed. Majestic units rebuilt, exchanged, \$20.00. Satisfied customers in all parts of the United States. Give model when writing. **REFRIGERATOR ENGINEERING PARTS & SERVICE CO.,** 2800 So. Parkway, Chicago, Ill.

MAJESTIC UNITS repaired \$17.50. General Electric units, \$30.00. Send your Majestic units to Ft. Smith and get them fixed right. We positively guarantee that we can make Majestics freeze as fast as when new. **PENO SERVICE CO.,** Ft. Smith, Ark.

Brown-Johnston Opens Remodeled Store

SPOKANE, Wash.—Brown-Johnston Wholesale Co., manufacturer-distributor of electric merchandise, celebrated the completion of remodeling activities in its retail store with an open-house June 10, featuring an "All-Electric Show."

A contest for the best short slogan for its new store was one of the features of the opening. Prizes included a Norge refrigerator and a Zenith radio.

A full-page newspaper advertisement advised the consumer that no merchandise would be sold during the open-house but that free kitchen aprons and recipe books would be given to the women, coffee served, and electrical appliances demonstrated.

Included in the remodeled quarters is a model kitchen and improved electrical contracting department where a staff of engineers advise on air-conditioning problems.

New Dealer Incorporated In Baltimore

BALTIMORE—Howard Store Fixture Co., 17-19 S. Howard St. was recently chartered and incorporated to distribute and deal in refrigerating machinery and refrigerating store fixtures.

Capitalization of the company has been placed at \$100,000, consisting of 1,000 shares of common stock, each with a par value of \$100. Principals and incorporators are Albert, Samuel, and Ida Libovitz.

Mills Novelty Leases Additional Property

CHICAGO—Mills Novelty Co. has entered into a long-term lease for the industrial property formerly occupied by Strom Bearing Co. at Palmer St. and the Northwestern Railroad here. The property contains seven acres of ground, with a building fronting 288 feet on Palmer St. and extending back 300 feet.

The company, it is said, plans to use the plant for the manufacture of counter ice cream freezers and auxiliary equipment.

The Palmer St. plant is located about a mile from the company's main plant at 4110 West Fullerton Ave., to which a factory extension and an administration building were added last fall.

Zenith Buys Property of Grigsby-Grunow

CHICAGO—The \$410,000 bid of Zenith Radio Corp. for part of the real estate of Grigsby-Grunow Co., former manufacturer of Majestic radios and refrigerators, was accepted by Referee-in-Bankruptcy Wallace Streeter at a meeting held in his court last Wednesday, on advice of creditors and bondholders of the defunct organization.

The property consists of four factory buildings, an office, and a warehouse.

Zenith now plans to undertake an expansion and concentration of its manufacturing facilities, to increase production, according to Hugh Robertson, vice president and treasurer of the company.

At present, the company plans establishment of emergency manufacturing lines in the new space, Mr. Robertson said. Zenith now has three plants in Chicago, which will eventually be transferred to the new location, so that all of the company's manufacturing operations will be centralized.

Wilson Will Direct New G-E Plastics Dept.

SCHENECTADY—Co-ordination of the G-E plastics department under the direction of Vice President C. E. Wilson has been announced by General Electric Co.

C. K. Mead has been placed in charge of a newly formed insulation, Glyptal, and plastics sales section of the appliance and merchandise department, with headquarters at Bridgeport, Conn. The newly formed section, besides assuming responsibility for plastics sales, will carry on the activities of the former miscellaneous sales section which was supervised by Mr. Mead and was concerned with the sale of insulation and Glyptal.

The new section will be under the general direction, as was the former miscellaneous sales section, of J. H. Crawford, manager of construction materials sales.

R. E. Coleman, manager of the plastics department, has been transferred to the appliance and merchandise department and will report directly to Vice President Wilson, as will G. H. Shill, who has been placed in charge of the manufacturing and engineering activities of the plastics department.

Dealer Uses Contest to Build Prospect List

HAMMOND, Ind.—Edward C. Minas Co., Crosley dealer, is promoting the sale of all Crosley products and gaining a large prospect list with a contest in which the applicant tells in 75 words why he thinks the 1936 Crosley is the most desirable refrigerator, reports C. S. Tay, manager of Crosley Distributing Corp., Chicago.

The contest entry blank provides spaces for the contestant to enter his name and address, number of persons in family, whether he owns a refrigerator, and if so what make and age. Similar information about washers, radios, gas ranges, and vacuum cleaners must be filled out to make the applicant eligible for the contest.

First prize in the competition is a Crosley refrigerator.

Merle Opens Offices as Engineering Consultant

NEW YORK CITY—To operate as engineering consultants, the firm of Andre Merle Associates has opened offices at 11 East 44th St. here.

The firm will specialize in estimating installation and operating cost analyses for air conditioning, automatic heating, mechanical ventilation and commercial refrigeration installations, in drafting plans and specifications, and preparing surveys.

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

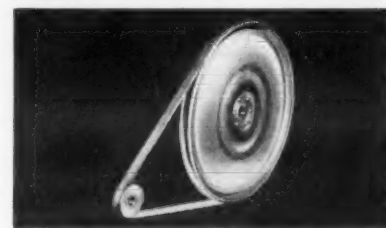
LEADING MAKERS OF REFRIGERATING AND AIR CONDITIONING EQUIPMENT STANDARDIZE ON

Dayton V-BELTS

• Because of their outstanding advantages Dayton V-Belts have been used as original equipment on leading makes of air conditioning equipment, electric refrigerators, washing machines and other appliances for many years.

Dayton V-Belts are the logical choice because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating.

A nearby distributor carries a complete stock of Dayton V-Belts at all



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World's Largest Manufacturer of V-Belts



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COMMERCIAL CABINETS

Complete Line • Heavily Insulated
Many Exclusive Features

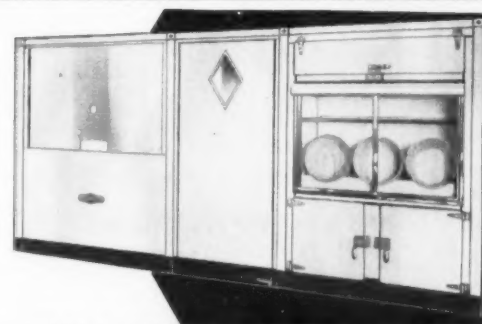
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Refrigerators, Display
Cases, Store Fixtures,
Desirable territory
available. Write for
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THE C. SCHMIDT CO., CINCINNATI

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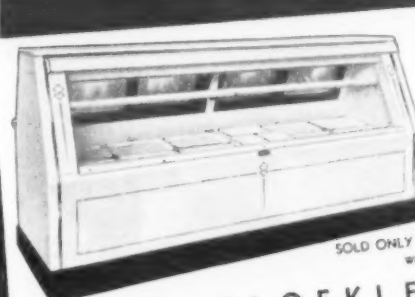
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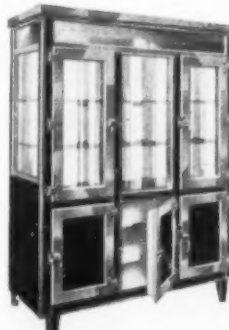
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DETROIT, MICH.

The Refrigeration Engineer's Manual

By S. L. Potts

Chimney & Natural Draft Towers Used in Cooling Condenser Water

Chapter 12 (Continued) Cooling Towers

Chimney or natural draft tower—This type is very much the same as the atmospheric type. It differs inasmuch as the sides are enclosed tight and built to a greater height. The top of the tower is built to produce a draft of air in a vertical direction through the baffles or checkwork construction over which the water is slowly flowing down.

The trays, baffles or checkwork in this type tower are built for a vertical flow of air. The air flow is counter to water flow, air up and water down. The movement of air is produced by the chimney effect and operates when the wind currents outside are very slight or in still calm air.

The height of chimney varies from 30 to 50 ft. above the checkwork in the tower. The warm water is pumped to the top of this tower where it is broken into fine spray or distributed over the top deck. The cooled water is collected in a basin at the base of tower.

Chimney Towers

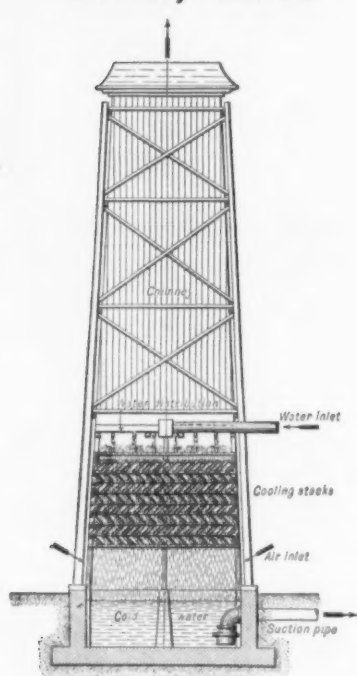


Fig. 96 shows a sectional view of a chimney draft cooling tower built over a concrete basin set into the ground.

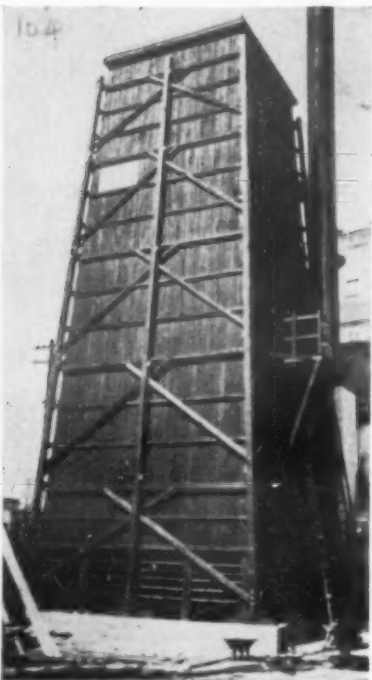


Fig. 97 is an outside view of the chimney draft cooling tower. The air inlet can be seen at the bottom of the tower. The platform halfway up to the top enters just above spray nozzles.

Forced Mechanical Draft Tower

Forced or mechanical draft tower is the same as the chimney or natural draft tower with the exception that the movement of air through the tower in a vertical counterflow direction is produced by a fan installed at the base of the tower.

They are different from atmospheric towers in the manner of applying air. The air is now forced upward in a zig-zag path between staggered slabs or distributors and the water flows downward over these staggered slabs.

In atmospheric coolers the air velocity is dependent entirely on the wind velocity. In forced draft towers the air velocity is fixed and constant and counter flow in direction. The number of slats used is greater and the water flow is broken up many times, the duration of flow or falling is longer than any other type, therefore the air comes into contact with water the longest time and results in best cooling effect.

The mechanical draft tower gives complete control of the air flow independent of wind or draft. This control increases the cost of installation and operation.

For good operating conditions on forced draft, 3 gallons per minute per square foot of horizontal net area. Therefore allowing 3 gallons per minute of water per ton of refrigeration, we require one square foot of tower area per ton of refrigeration. This requires about 1.5 cu. ft. of air to 1 cu. ft. of water. Air velocities of about 700 ft. per minute are used. To find the net free area required for air, take the total cubic feet of air per minute and divide by 700.

Limit of Cooling

The limit of cooling is reached when the warm water has been cooled to the temperature of the wet-bulb thermometer in the air entering the tower. This is the limit because at this point, no further evaporation takes place from the warm water.

Forced Draft Towers

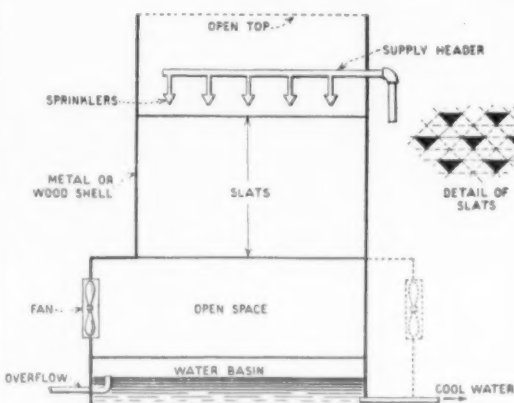
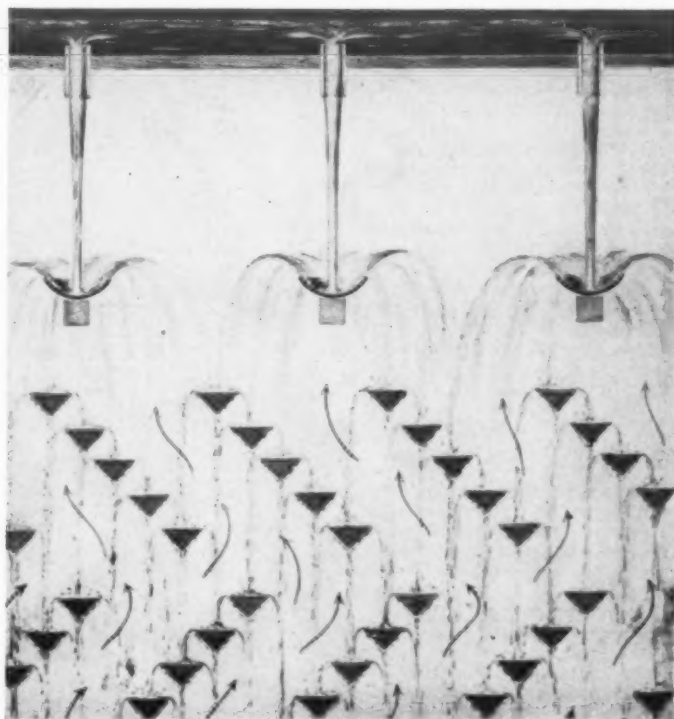


Fig. 98 (left) shows a forced or mechanical draft cooling tower. The space representing the slats is not to scale. One or two blowers may be used.

Fig. 99 (below) demonstrates the nozzles and baffles in a forced draft cooling tower built by Foster Wheeler Corp.



Final Instalment

This chapter concludes the instalments of the Refrigeration Engineer's Manual which have been appearing in weekly issues of Electric Refrigeration News since Jan. 1, 1936.

The material will be revised into book form and published in the near future. Copies of the Refrigeration Engineers' Manual will sell for \$3 each. In combination with a year's subscription to the News, the price is \$5 for the News and the book.

and the air becomes 100% saturated with water vapor. In actual operation, the values obtained are about 30% to 50% of the possible amount.

The cooling produced in a tower in practice may be found by using average of the percentages given above.

$$\text{Cooling} = .40(t_1 - t_2)$$

The temperature change in warm water entering cooling tower is:

$$\text{Temperature drop} = t_1 - t_2$$

$$\text{Then } t_1 - t_2 = .40(t_1 - t_2)$$

$$-t_2 = .40(t_1 - t_2) - t_1$$

Changing all signs to the opposite we get:

$$+t_2 = t_1 - .40(t_1 - t_2)$$

The pounds of air required to be circulated per minute for the cooling of the water is:

$$W_a(h_2 - h_1) = W_w(t_2 - t_1)$$

$$W_a = \frac{W_w(t_2 - t_1)}{(h_2 - h_1)}$$

and the volume of air in cubic feet per minute is found by:

$$V_a = \frac{W_a}{d}$$

t —Wet bulb thermometer temperature of air entering base of cooling tower.

t_1 —Temperature of warm water entering top of cooling tower.

t_2 —Temperature of cooled water leaving bottom of cooling tower.

h_1 —Heat contents of air in B.t.u. per pound entering cooling tower figured above zero degrees F.

h_2 —Heat contents of air in B.t.u. per pound leaving cooling tower figured above zero degrees F.

W_w —Weight of water to be cooled per minute.

W_a —Weight of air to be circulated per minute.

d —Density of air entering cooling tower taken at dry bulb temperature or the weight of 1 cu. ft. of air.

V_a —Volume of air entering cooling tower in cubic feet per minute taken at dry bulb temperature.

The Buyer's Guide

Special rates apply to this column only.
Write Advertising Dept. for full information.

CONDENSING UNITS and COMPRESSORS

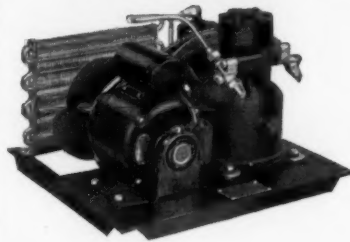
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A SUBSIDIARY OF THE
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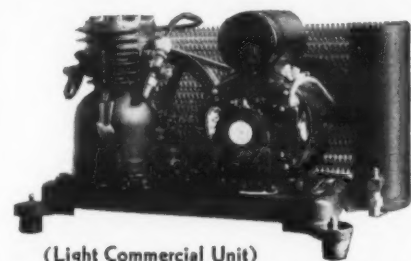
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QUALITY-BUILT
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For electric refrigerators, washers, beer pumps, oil burners, compressors, air-conditioning units, etc. . . . Gilmer has a V-Belt to fit . . . from the largest stock of moulds in the world. Write for V-Belt catalog.



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Shorten Every Job with IMPERIAL SERVICE TOOLS



A perfect, leakproof joint in less than 30 seconds. 175-F. . . . \$4.85

As details of design grow more scientific and complex, engineers, installation and service men depend more and more on Imperial tools for better joints at higher speed. Two examples shown.

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6 sizes. 101-F. . . . \$2.10 per set

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Thoroughly reinforced all steel attractively finished cabinets.

Complete line of different Models and Capacities.

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Spring 7-1800

Refrigeration Engineer's Manual

Different Types of Towers Used For Cooling Condensing Water



Fig. 100—A forced-draft cooling tower. A fan over each side produces the circulation of air throughout the tower.

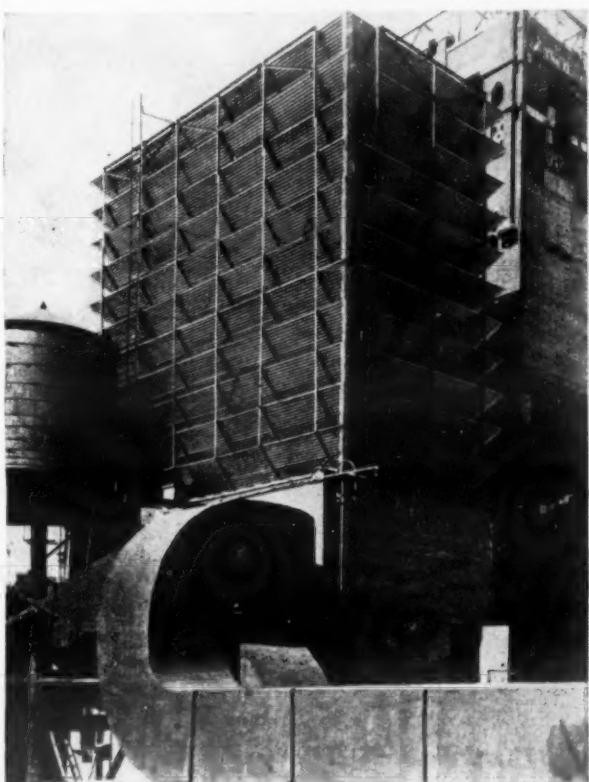


Fig. 101—An atmospheric cooling tower on the roof of a building. It consists of 11 decks, each protected by a louver wall. No attempt has been made to enhance the appearance of the equipment.

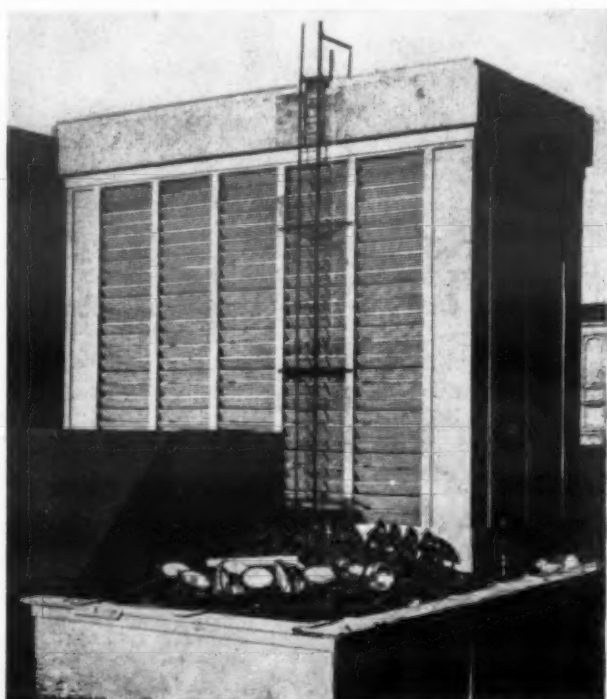


Fig. 102—The same type of tower as in Fig. 101, showing what a little work can do to improve appearances, without materially reducing its effectiveness for cooling. It is hardly recognizable as a cooling tower.

Meteorologist Gives Data on Heat Waves In Various Sections

NEW YORK CITY—A warm wave toward the middle of June and again during the last days of the month for the North Atlantic states and the Eastern Lake Region is forecast by Henry Helm Clayton, meteorologist, in a study edited by Dr. Warren M. Persons, and issued by the Temperature Research Foundation of Kelvinator Corp.

Boston, New York, Philadelphia, Washington, Richmond, Buffalo, Cleveland, and Detroit are among the cities which will have excessive heat during the last days of June, according to Mr. Clayton, who is reputed to have forecast the severe sub-normal temperatures of January and February, 1936. Mr. Clayton bases his long-range forecasts on changes of solar heat.

Where July Heat Will Fall

The most intense heat will come during the first and third weeks in July for the section of the country from Portland, Me., to Richmond, Va., on the east, to Detroit, Toledo, Harrisburg, Pa., and to Lynchburg, Va., on the west, Mr. Clayton says.

During the last eight years, summer temperatures in most of the United States have been excessively high. The mean of the average maximum daily temperature and the average minimum daily temperature for June, 1934, for example, was in excess of the "normal" for that month by amounts ranging up to 8° F. in nearly the entire United States.

In June, July, and August, 1935, temperatures were generally in excess of the normal throughout the nation, but not as extremely so as in 1933 and 1934, Mr. Clayton reports.

He also forecasts heat waves in July for the Grain Belt extending eastward in the Ohio valley, north in the upper Mississippi valley, and northwest in the Missouri valley. Although the average daily temperatures in this district were in excess of normal for the five years 1930-1934, few deficiencies from the normal were reported in 1935.

Forecast for Western States

For the Rocky Mountain and Pacific Coast states Mr. Clayton predicts less rainfall and higher temperatures than normal in June. This district is expected to keep up its record for above-normal temperatures which it has maintained for the past seven years.

Hotter than normal temperatures in July for the region from the South Atlantic Coast to the Mississippi River, and in the region west of the Mississippi, above-normal temperatures are Mr. Clayton's prediction. Temperatures in the cotton belt have been above normal for most of the past five years, he says.

Kelvinator's bulletin gives a table of averages for 50 weather stations.

Hot Weather Makes It Necessary to Close Sales at Home

MILWAUKEE—Hot June and July weather will reduce street traffic 40% and make it necessary for refrigerator sales to be closed in the home, Gerald Stedman of Cramer Krasselt Co., advertising agency, who is making a survey of the Milwaukee refrigeration field, told a recent meeting of Wisconsin Radio, Refrigeration, and Appliance Association.

Mr. Stedman also advised salesmen to obtain the aid of their wives in selling. His survey shows that 88.9% of Milwaukee salesmen are married. Of this number, 60.8% are getting sales help from their wives.

Earning \$151.19 per month on the average at present, as compared with the national average of \$169.00, Milwaukee salesmen expressed the desire to earn \$205 per month in the questionnaire which was circulated in making the survey.

The greatest selling problems to be met in Milwaukee are overcoming price cutting and price competition; finding enough live prospects; making successful closings; and getting enough presentations in a day.

Milwaukee is below the average nationally on refrigeration sales, in the opinion of the salesmen replying to the questionnaire, for these reasons: conservative character of population; lack of organized selling effort; lack of encouragement on time buying; not enough advertising; lack of price maintenance; and late summer.

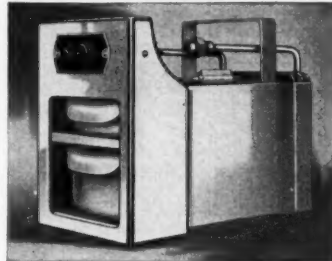
G-E Declares Dividend of 25 Cents a Share

SCHENECTADY—A dividend of 25 cents a share on the common stock was declared at a meeting of the board of directors of General Electric Co., held in Schenectady June 12. The dividend is payable July 27 to stock of record June 26.

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

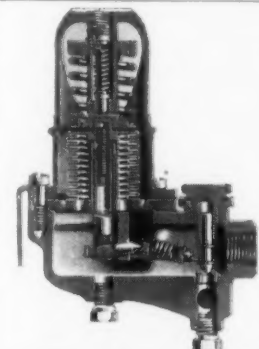
The NEW "HUMIDIPACK" EVAPORATOR by PEERLESS



A "1936" line of Household Evaporators with "1936" sales points.

1. High Box Humidity
2. Fast Ice Cube Freezing
3. Clean design—Smooth exterior
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5. "Humidi-pack" is the Power-Pack of Refrigeration

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CHICAGO TWO FACTORIES NEW YORK
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The valve illustrated—S2V—regardless of range or differential setting opens and closes with a positive snapping action at any previously determined settings which are within its limitations. Exclusive feature is adjustable range of 20° of vacuum to 60 pounds pressure in single valve. Differential is adjustable, varying from 15° of vacuum to approximately 29 pounds at the higher pressure ranges.

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For all types of household systems

By E. M. NEWLIN

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ELECTRIC REFRIGERATION NEWS

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